7-1-1966

Special Libraries, July-August 1966

Special Libraries Association

special libraries

July-August 1966, vol. 57, no. 6

Three Ages of Reference Work

Bibliography on Air and Water Pollution

Eli Lilly Company Library History

Simulated Machine Indexing, Part 4

CODEN

SPECIAL LIBRARIES is published by Special Libraries Association, monthly September to April, bimonthly May to August, at 73 Main Street, Brattleboro, Vermont 05301. Editorial Offices: 31 East 10th Street, New York, New York 10003. Second class postage paid at Brattleboro, Vermont.

POSTMASTER: Send Form 3579 to Special Libraries Association, 31 East 10 St., New York, N. Y. 10003

special libraries

OFFICIAL JOURNAL
SPECIAL LIBRARIES ASSOCIATION

JULY-AUGUST 1966
VOLUME 57, NUMBER 6

Papers published in SPECIAL LIBRARIES express the views of the authors and do not represent the opinion or the policy of the editorial staff or the publisher. Manuscripts submitted for publication must be typed double space on only one side of paper and mailed to the editor. ● Reprints may be ordered immediately before or after publication. ● Subscriptions: U. S. $10; foreign, $11; single copies, $1.50. ● Annual author-title-subject index published with December issue. © 1966 by Special Libraries Association.

INDEXED IN *Business Periodicals Index, Public Affairs Information Service, Library Literature, Management Index, Library Science Abstracts, and Hospital Literature Index.*

SPECIAL LIBRARIES ASSOCIATION

President

DR. F. E. MCKENNA — Information Center, Central Research Laboratories
Air Reduction Company, Inc., Murray Hill, New Jersey 07971

President-Elect

MRS. ELIZABETH R. USHER — Art Reference Library, Metropolitan Museum of Art
Fifth Avenue and 82nd Street, New York 10028

Advisory Council Chairman

MRS. HELEN F. REDMAN — Los Alamos Scientific Laboratory
P. O. Box 1663, Los Alamos, New Mexico 87544

Advisory Council Chairman-Elect

CHARLES H. STEVENS — Project Intrex, Massachusetts Institute of Technology
77 Massachusetts Ave., Cambridge, Mass. 02139

Treasurer

JEAN E. FLEGAL — Business Library, Union Carbide Corporation
270 Park Avenue, New York, New York 10017

Past-President

ALLEEN THOMPSON — Atomic Power Equipment Department
General Electric Company
175 Curtner Avenue, San Jose, California 95125

Directors

MRS. THEODORA A. ANDREWS (Secretary) — Pharmacy Library, Purdue University
Lafayette, Indiana 47907

WILLIAM K. BEATTY — Northwestern University Medical Library
303 East Chicago Avenue, Chicago, Illinois 60611

CHARLOTTE GEORGI — Graduate School of Business Administration Library
University of California, Los Angeles, Calif. 90024

PHOEBE F. HAYES — Bibliographical Center for Research
Denver Public Library, Denver, Colorado 80203

RUTH NIELANDER — Lumbermens Mutual Casualty Company
4750 North Sheridan Road, Chicago, Illinois 60640

GORDON E. RANDALL — Thomas J. Watson Research Center Library, IBM
Yorktown Heights, New York 10598

Executive Director

BILL M. WOODS — Special Libraries Association
31 East 10th Street, New York, New York 10003

Membership

Dues: Sustaining: $100; Active: $20; Active Paid for Life: $250; Associate: $20; Affiliate: $15; Student: $2; Emeritus: $5. For qualifications, privileges, and further information, write Special Libraries Association.

SLA Translations Center

John Crerar Library, 35 West 33rd Street, Chicago, Illinois 60616

Annual Convention

The 58th Annual Convention will be held at the Hotel Commodore, New York City, May 28-June 1, 1967.

Swamped?

Why Not Eliminate The Multi-Purchase Order Habit

. . . and receive advance copies of all volumes in the renowned Pergamon International Series of Monographs and the Progress Series. Now, one purchase order gives you pin-point subject accuracy to all of the books published in both series and assures first-copy service to your library.

Pergamon's *ISM Series* is designed to provide scientists the world over with studies in depth of important topics in the major scientific disciplines. The books are produced under the editorial guidance of industrial and academic experts, and are written by world-recognized authorities.

Progress Series. To meet the growing need for rapid dissemination of information in the sciences, review volumes in the *Progress Series* contain the world's most original and up-to-date experimental and theoretical findings.

ABOUT THE PLAN

On a continuing basis you will receive all volumes published in the Pergamon Series you select, plus these additional advantages:

1. Select first-copy service – automatically as they are published, you receive your advance copies in plenty of time to review and process each book before requests for it start coming in.

2. Liberal discounts – if your holdings of any of the series you wish to purchase are not up-to-date and you wish to complete your set, ask for extra discount.

3. No postage costs – we absorb all postage and shipping expenses, whether you're ordering or returning books.

4. Convenient billing–invoices can be sent to your purchasing office while shipments may be directed to any department or branch you specify.

5. Full return privileges – books purchased under this plan may be returned for full credit within 6 months of invoice date. Return labels are supplied with each shipment for your convenience.

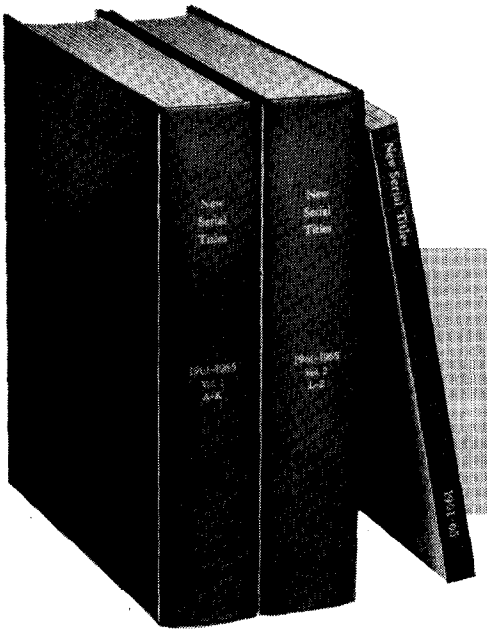
6. Library of Congress Cards – automatically supplied.

PERGAMON

...the newest luxury in reference works–

at a price

you can easily afford!



Now R.R. Bowker Company and Arno Publishing, Inc. pool their resources to provide a 5-year CUMULATIVE of NEW SERIAL TITLES covering 1961-65 — at the unprecedented price of $38.35 plus postage for the 3-volume set!

THIS IS just about one-half the price of LC's current 4-year CUMULATIVE for 1961-64 and should enable all libraries — large and small — to afford not only one copy, but several.

NEW SERIAL TITLES 1961-65 includes details on some 120,000 serial titles held by 732 libraries in the U.S. and Canada — details that are necessary for arranging inter-library loans, finding bibliographic data on periodicals that patrons request, etc. Entries are arranged alphabetically, with information on the serials title, issuing body, place of publication, date of first issue and of final issue if it has ceased publication, library holdings, and Dewey classification number.

The first two volumes of this new CUMULATIVE are clothbound, approximately 1,540 pages each. The third volume, CHANGES IN SERIALS, is paperbound, approximately 125 pages.

Reserve your copies now — for delivery when ready in the Fall of 1966...

This is a CUMULATIVE you will not want to miss if you are to keep your periodical reference facilities complete and up to date. It supplements the third edition of the UNION LIST OF SERIALS, covering titles and holdings for 1943-50 and published by H.W. Wilson Company and NEW SERIAL TITLES 1950-60, issued by the Library of Congress. And it is the last big 5-year CUMULATIVE until 1970!

Write to

R. R. Bowker Company,
1180 Avenue of the Americas, New York, N.Y. 10036

Expectations of Excellence

Dr. F. E. McKenna SLA President, 1966-67

THE CONTINUED health and the continuing growth of a profession are not determined by simple arithmetic: that is, by simply adding up the activities and accomplishments during each year of its existence.

Initially, a profession comes into being because a new and unique service is required—or because a special social need must be fulfilled. The profession grows—and its professional association thrives—if society can always recognize an ever-increasing value to be derived from the profession.

Is an association able to act with knowledgeable promptness when new problems arise within its proper spheres of influence? The ultimate reputation of the organization is most often determined by its ability to respond to external factors and to external influences. To look inwards on its own internal problems alone is *never* sufficient. It is *also* necessary to look *forward* and to anticipate changes.

To be able to absorb the best of the new does not demand that we must discard all of the old. We are also *not* required to engage in a competitive rivalry to establish a *pseudo*-superiority of either the old or the new; but, rather, that we be always ready with open minds—and with open hearts—to select the best of both and to blend these so as to always elevate the potential of our profession. In so doing, we will then always be prepared to respond with intelligent alacrity to the ever-increasing demands from society.

As I have reviewed the challenges put to the Association by my predecessors, it has been heartening to find that most of their objectives have been met. But, even when these objectives were received enthusiastically by the members, the programs, seemingly, were not always implemented with a sense of *urgency.*

It is this apparent lack of urgency—disguised in several ways—which should concern all of us—and it is this area which will be one of my concerns during my term of office.

Gauntlets of achievements, gauntlets of personal and professional satisfaction—and of professional recognition—have been put to the Association on many occasions. But, I will suggest that the *explicit* recognition of one important component may still be missing from our corporate aims.

I suggest to you that this overlooked ingredient is the *quality of excellence of purpose and excellence of action.* I propose that we do not always recognize the need for expectations of *our collective* excellence. And that we have often postponed this recognition by consigning such expectations to a limbo below the conscious level of our collective minds.

We have all heard statements that hundreds of our members hold some sort of office or committee appointment; and that such a massive roster is one strength of our Association. YES! ! ! If there is *true* participation, then we *do* have great strength. But—if we delude ourselves with only a roster of names, then our corporate sinews are still *not* stretched to their fullest capabilities of excellence.

Each year, only one-half of our members cast their ballots for officers and directors. If you did *not* vote this year, why not?

If you did vote, did you vote so that you could expect excellence in the management of the Association by your elected Board of Directors?

Are you communicating to your elected Board *your* expectations of *excellence* for a dynamic, growing profession?

Do you expect excellence in performance from the Association's staff at its several offices?

Do you expect—and, do you obtain—a consistently high professional excellence from the programs and publications of the Association?

And, finally, do you expect and attain excellence in your own contributions to the Association's corporate health?

If we, as an Association, are not prepared to respond with knowledgeable promptness, then we must recognize that the price of our NON-*preparedness* for future developments will be relegation to a less influential position in our "knowledge industry."

According to some crystal balls, the scrap heap of our civilization will be littered not only with obsolete machinery but with *by-passed* human talents as well. The dangers of obsolescence are great; NOT because the knowledge is obsolete, but because the needs for *intellectual* leadership—rather than for purely practical leadership—are, also, greatly enhanced in scope.

Expectation is an attitude. Expectation may appear either as a positive or as a negative anticipation of performance. A realistic positive expectation calls forth one's best efforts, but a negative attitude tends to justify the continuance of less than adequate performance. To focus on the minimum required is always to destroy human motivation. To focus on the best that can be reached—by constant effort and ability—always builds motivation. An ideal climate will make use of the normal human desire to meet the expectations and the respect of our peers. *Expectation is a strong motivating force.*

I would address *three* expectations to *all of you at all* levels of the Association; but I would specifically address them to those of you who have accepted specific responsibilities:

. . . to the Chapter and Division officers who are responsible for the advancement of programs at their local levels;

. . . to the Committees and to the Special Representatives who are to develop programs and projects for the Association;

. . . to the Association's staff who are to provide day-by-day implementation of the Association's programs; and

. . . to the Board of Directors whose responsibility it is to define *wisely* the goals of the Association—and to guide and to manage its growth and development.

The *first* of these expectations is that of flexibility in the face of change. To be effective is to be flexible, with the ability and the capability to seek and to welcome innovations. It requires an understanding of the human mind's normal resistance to change—the mind's *fundamental inertness* to any change.

The *second* major expectation is that neither individuality nor creativity be stifled, but, rather, that they establish an environment for *our* performance. Many of us here decry tendencies that lead toward conformity and stagnation of the individual. The real challenge is the establishment of a structure—*and of plans*—which lead to an environment that removes obstacles.

The *third* major expectation facing us is the rapidly increasing sophistication of planning. Better long-range forecasts are involved: better identification of our goals and of our methods to attain our goals; better organization and procedures to induce our planning; and better tools for the *analysis* of our planning.

Thus far, in discussing the expectations for our corporate excellence, I have not yet, directly, referred to SLA's "Goals for 1970." In genealogy, a period of 30 years is the usual time span assigned to one generation. Thus, 1970 will be an ending of our second generation and the beginning of our Association's third generation.

Our first generation was strikingly characterized by pioneers, who moved boldly and unhesitatingly into new and virgin fields, who exercised Herculean efforts to preach their gospel of specialized library services—and, who attained the stature of giants in the profession of their own creation.

This era of our second generation is characterized by a proliferation of new disciplines. The lack of time to understand and to absorb the significance of these new disciplines has led to suspicions—and perhaps, even, to recriminations. Many of us had not had the time to pursue—or to fully understand—the disciplines that are developing today and those that will develop tomorrow; and that will certainly be the future handmaidens of our own true love: specialized library and information services.

To maintain, and to advance, our roles even further, we must recognize, and we must include the *expectations* of:

. . . excellence in encouraging the production—*not* of more literature—but of improved literature that is thus more readable, more understandable, and therefore more effective;

. . . excellence in OUR OWN production of knowledge, thus clearly laying to rest the spectre that we are only *passive* manipulators of the knowledge of others.

. . . *and,* ABOVE ALL, excellence in the recognition that the specialized knowledge with which we are entrusted is, first and foremost, the fruit of the human intellect; and which, therefore, *demands excellence,* as we strive to MEET these expectations with prudence and with honor.

In 1930 a bronze plaque was erected and dedicated in the Newark (New Jersey) Public Library. Earlier in that year, there had occurred the death of John Cotton Dana, the spiritual godfather of *our* Special Libraries Association. The plaque is inscribed:

"Lover of books and beautiful things, helper of men,
he based idealism on common sense—
and joined loveliness with utility.
He blazed intellectual trails in culture,
education, and industry."

I submit to you the words of that commemorative plaque. Do you recognize, in these words, the expectations for *our excellence?* Will you *accept,* from these words the challenges to *our excellence?* An *excellence* we can bequeath, as *our* testament, to the future?

F. E. MCKENNA

SLA's New President—
Dr. F. E. McKenna

FRANCIS E. MCKENNA brings some of the exuberance and pioneering spirit of the West back to the East. Born in Arizona in 1921, Frank moved to California (accompanied by parents) in 1924.

His early schooling took place in Oakland where he attended a local grammar school, St. Jarlath's Junior High School, and Castlemont High School. After graduating from the University of California (Berkeley), he entered the Graduate School of the University of Washington in 1941. His major field was chemistry, with minors in mathematics and physics. After writing a dissertation with the formidable title, "Studies of Hemiacetal Formation in Alcohol-Aldehyde Systems," which was later published in the *Journal of the American Chemical Society*, he was awarded the Doctor of Philosophy degree in 1944. As evidence of his precocity, it should be noted that Frank was the youngest person to have received a Ph.D. from the western universities at that time. In addition to studying, he also served as a Teaching Fellow and was active in Civil Defense.

Before joining the staff of the Air Reduction Company, Inc. (Airco) in 1948, Frank was on the staff of the SAM Laboratories (Manhattan Project) at Columbia University and was a Post-Doctoral Research Fellow in the Institute for Nuclear Studies at the University of Chicago.

His first assignment at Airco was as a Senior Research Chemist, and he continued in laboratory research programs until 1953. In that fateful year (for special librarians, as well as Airco) Frank was assigned to develop the laboratories' informational resources and facilities. He says himself, and we can believe him, that he was probably given this job because he had complained the loudest and at the greatest length about existing resources. A description of the facility Frank and his staff have developed is not included here since we are concentrating here on the man.

Since joining the Special Libraries Association in 1953, McKenna has been an indefatigable worker on the Chapter, Division, and Association levels. In addition to working on many committee assignments, he has been Chairman of the New York Chapter Science-Technology Group, President of the New Jersey Chapter, Chairman of the Metals/Materials Division, and the Association's Division Liaison Officer. Anyone who has worked on committees with him knows how devoted he is and what a slave-driver he can be (and make you like it).

Frank's personal likes and interests are quite a combination, As a child, partly because of parental urging, he was bi-lingual in English and German, and he has since studied Japanese and Russian. In a talk given at Barnard College recently he urged students, especially those interested in science, not to ignore literature and the humanities in general—certainly not the attitude of many of today's scientists. Music has long been one of his interests, and he once played the violin and viola in his high-school orchestra, the University of California Symphony Orchestra, and the University of Chicago Symphony Orchestra. Reading is a passion with him, and he's also a very good cook.

A needler he is, but he can take it, too. Sometimes impatient with those who can't keep up with him, he is yet a good and sympathetic listener. The Irish in him no doubt accounts for his warmth and sense of humor.

DONALD WASSON, Librarian, Council on Foreign Relations, New York

SLA Board of Directors 1966-67

President-Elect


Bradford Bachrach

Mrs. Elizabeth R. Usher is a Nebraskan who adopted New York 18 years ago. After receiving her B.S. in L.S. at the University of Illinois, she recalls, "a chance meeting with the head of the art department during my first job after graduation from library school resulted in my becoming the librarian of the Cranbrook Academy of Art. This was the beginning of my career as a special librarian." Mrs. Usher is now Chief of the Art Reference Library at the Metropolitan Museum of Art in New York City. Becoming a special librarian was only the first step in her professional life. "My admiration and respect for such enthusiastic SLA workers as Margaret Fuller and Rosemary Demarest, their persuasion and encouragement, led me to become active in Chapter, Division, and Association activities." On the job or as an SLAer, Mrs. Usher feels that "as special librarians we have the responsibility to lead in the development and use of improved library techniques, more efficient library equipment, and more proficient methods of communication with our management and our clientele. By its determination to raise the standards of librarianship, the Special Libraries Association has assumed leadership among professional associations and has become a proving ground for new developments in the fields of research. . . ." Mrs. Usher relaxes on the range golfing or at the range trying out new recipes.

Advisory Council Chairman-Elect

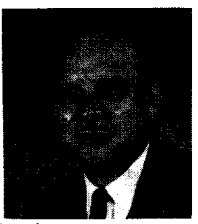
Charles H. Stevens, staff member of Project Intrex at Massachusetts Institute of Technology, Cambridge, has approached the field of special librarianship from several directions. "A happy coincidence of supply and demand got me into specials. The Air Force needed a librarian for a new library, and my background of military service and a newly completed library degree was suited to their needs. I've stayed in special libraries because I enjoy the dedication of effort to specific requirements." Many of Mr. Stevens' Association activities have been concerned with publications—its books, biblographies, monographs, *Special Libraries,* and translations. He has also been an officer in the Science-Technology Division and its Engineering Section. Mr. Stevens feels that, "The special librarian, because of his freedom to focus on a narrow segment of knowledge, has the opportunity to avoid the diffusion of effort and emphasis that dilutes the work of the more general practitioner. . . . When he is successful, the special librarian shortens the research path, the research time, and therefore the research cost. And that is a worthwhile contribution." If Mr. Stevens is a specialist by profession, he is a generalist when it comes to pastimes—action sports, serving on the Lexington school committee, creating furniture and electrical geegaws, helping his three sons with their numerous projects, and occasionally taking a busman's holiday in the town library.

New Directors

Mrs. Theodora Andrews has spent her entire career as a librarian in the Purdue University Libraries, the University where she also received her undergraduate degree. She has been Pharmacy Librarian since 1956. Mrs. Andrews gives credit for the impetus and sustainment of her interest in special librarianship to "the 'special libraries' attitude which prevails at Purdue University . . . particularly encouraged by such people as John Moriarty and Esther Schlundt." Summertime finds Mrs. Andrews working as a visiting lecturer at Syracuse University's School of Library Science or the University of Illinois Graduate Library School. In addition to serving as the Editor of the *Copnip List* and a contributor to *Unlisted Drugs,* she has compiled a *Thesis Manual,* published by Purdue in 1964 and a *World List of Pharmacy Periodicals,* published in the February 1961 *American Journal of Hospital Pharmacy.* Mrs. Andrews is the personification of what she feels is the goal of the Association and special librarianship—service. In what is left of her spare time she can be found sewing, reading, or collecting antiques.

Westw'd Village Studio

Charlotte Georgi was an English instructor at the University of Buffalo and an Assistant Professor in the humanities department at Stephens College before she became Head of the Business Administration library at the University of North Carolina and later of the Graduate School of Business Administration at the University of California, Los Angeles. She is also an author, editor, and compiler. A sample of her work includes *The Novel and the Pulitzer Prize, 1918-1958, The Businessman in the Novel, Statistics Sources,* and articles and book reviews for the *Herald-Tribune Book Review, College Art Journal, Library Journal,* and other library periodicals. For SLA she exerted her literary talents as co-compiler of *Sources of Commodity Prices,* editor of *Literature of Executive Management,* and editor of the Business and Finance Division's *Newsletter.* A member of several other library associations, Miss Georgi has also been elected to four scholarly, educational, library, and business honorary societies. Her philosophy of librarianship is lucidly set forth in her "Credo," published in the May-June 1966 *Special Libraries.* Her non-library interests run the gamut from collecting ceramic tiles and U.S. commemorative stamps to compiling a biblography of the businessman in fiction to the care and feeding of a parakeet, canary, and several finches.



Gordon E. Randall is probably best known to SLAers as the lively editor of *Sci-Tech News,* for which job he received the Division's Publication Award in 1960. In that same year he assumed his present position as Manager of the Thomas J. Watson Research Center Library, IBM, in Yorktown Heights, New York, having earlier headed libraries for the TVA, Carbide & Carbon Chemical Corporation, AEC, and ARO, Inc. Active in the Science-Technology Division, of which he has been Chairman, Mr. Randall has also worked to strengthen the profession by serving as the Association's representative on the ASA Z-85 Committee, the ALA Library Technology Project Advisory Committee, and the IFLA Committee on Library Building. He considers his trip visiting libraries and information centers in the Soviet Union as a member of the SLA exchange group earlier this year and his appointment to the New York Commissioner's Committee to Advise the State Education Department on the Higher Education Act two highlights of his professional career. He has a straightforward view of the mission of special librarianship—"As a first step, let's do an honest job on the traditional activities of putting knowledge to work, i.e., giving the customer the information he needs. When we have done this, let's then look for ways to improve." A former sailing enthusiast (he even built his own boat), Mr. Randall now spends his week-ends building stone walls or helping his wife (also a special librarian) tend the plants and flowering shrubs on their extensive hillside garden.

EDITOR'S NOTE: For biographical sketches and photographs of Board of Director members who are continuing in office, see *Special Libraries,* July-August 1965, pages 372-4: Alleen Thompson, Immediate Past-President; Mrs. Helen S. Redman, Advisory Council Chairman; Phoebe F. Hayes and Ruth M. Nielander, Directors. Also see *Special Libraries,* July-August 1964, page 344: Jean E. Flegal, Treasurer; William K. Beatty, Director.

UNSUNG HEROES OF SCIENCE: A TRIBUTE

"There is a long list of 'unsung heroes' in the history of scientific progress—people who contribute tremendously important benefits but receive woefully inadequate support and recognition.

"In my opinion, librarians rank very high on this list. We often take libraries for granted. We fail to appreciate how important a role libraries and librarians play in the total research effort.

"The quantities of information increasingly reported in the literature have become staggeringly vast, and the needs of the educators and research workers have become more and more demanding. Concurrently, librarians have matured into informational scientists. The use of computers to retrieve vast amounts of information is ushering in a new era of research support—yet the public is hardly aware of these major developments.

"Libraries as well as laboratories, librarians as well as research workers, merit and need our support. Librarians are important members of our research teams.

"Let us find ways to give them the recognition they justly deserve, and to lend support for their facilities which make possible 'Better health for all living things—through research.' "

From "The President's Corner" in the *MRAC Bulletin* (Medical Research Association of California), January 1966, p. 2.

special libraries

One hundred years ago there were vastly fewer reference books than there are today, and the reference librarian had to make up for the lack by his special knowledge. As fast as this special knowledge was superseded by publication of a reference book, it was put to use for another kind of information that had not yet been assembled in a book. Progress in reference work, in consequence, seemed until recently to be measurable by progress in the publication of reference books. Computers, with their catalogs and concordances and indexes, contribute to this progress, but they also hold out the prospect of putting to the service of reference work, wherever it may be conducted, the resources in catalogs, bibliographies, special indexes, and even reference books and reference collections, wherever they may be, and of creating one reference library of the libraries of the region, the country, and ultimately, perhaps, the world.

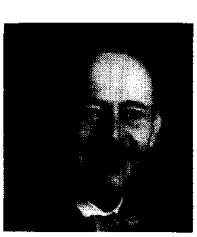
Three Ages of Reference Work

VERNER W. CLAPP

EACH GENERATION of reference librarians adapts to the conditions in which it serves—to the nature of the inquiries and of the inquirers and to the state of the reference literature, including the bibliographic services. I would like to maintain that with respect to the status of the reference literature, and especially the bibliographic services, reference librarians have exerted a very considerable and might exert an even greater influence. I do not think that the facts will support me in this, but let me nevertheless draw three pictures with this thesis in mind—pictures of reference work taken from yesterday, today, and tomorrow.

The First Age

In September of 1937 my boss in the Library of Congress, Martin Arnold Roberts, was promoted to be Chief Assistant Librarian. David C. Mearns took his place as Superintendent of the Reading Rooms, and I, in turn, was promoted to Dave's vacancy as Assistant Superintendent. So I went to pay my respects to the Librarian, Dr. Herbert Putnam, with whom I had spoken just once in my 15 years of service. He regaled me with an evaluation of his Chief Assistant Librarians (of whom he had had four), including my late boss.



Miller of Washington

Mr. Clapp has been President of the Council on Library Resources, Inc., Washington, D. C., since its establishment on September 18, 1956. His preceding 33 years were spent at the Library of Congress, where he served as Director of the Administrative and Acquisitions Departments and as Chief Assistant Librarian. A member of many professional societies and a prolific writer and speaker, the above article has been extracted from a talk given to the Reference Services Division of the American Library Association in Detroit, July 6, 1965, and reprinted from the 1966 fall issue of "The Bulletin of the Louisiana Library Association."

First, he said, there was Spofford. (This was Ainsworth Rand Spofford, Librarian of Congress from 1864 to 1897. It was he who transformed the Library of Congress from a legislative into a national library. In 1897 when LC's magnificent new building was finished, Dr. Spofford, having then reached the age of 72 and there being no retirement plan in those days, stepped down to become Chief Assistant Librarian, a unique title which was invented for him and which he held until his death in 1908.)

First, said Dr. Putnam to me, there was Spofford. He was a great reference man, but of course he had no use for the apparatus.

No use for the apparatus. By this Dr. Putnam meant, with just a touch of impatience in his voice, that Dr. Spofford was one of those old-time librarians who, for lack of adequate catalogs or other bibliographic tools, learned to run their libraries out of their heads and having acquired the habit of doing so, could never be broken of it.

What a picture Dr. Putnam's swift characterization conjured up! For more than 30 years Dr. Spofford had a desk (but he could rarely have sat at it) in the Library Space west of the dome in the United States Capitol, at the cross-roads of traffic in that building. There he was available to every member of Congress, indeed to every inquirer, whether official or not. His knowledge of the collection was encyclopedic, and his typical method of assistance seems to have been to refer an inquirer to a specific book whose location on such-and-such a shelf in such-and-such an alcove he would point out, sending the inquirer to the spot.

So short a span, that of one professional generation, separates reference work conducted with the aid of peek-a-boo cards and similar devices—as it actually is in some libraries—from reference work performed with no apparatus whatsoever except an intimate knowledge of the books. Dr. Spofford was certainly one of the last to conduct reference work in a large general library in this way, and Dr. Putnam's slight impatience with the method is understandable; it leaves nothing to successors except awe and frustration.

Put yourselves into the position of Dr. Spofford, doing reference work with a collection of some 70,000 volumes in 1864.

The fact is that very little that one relies upon today would have been at hand. But this defect was soon remedied, for before the end of the year 1864 there appeared the *Alphabetical Catalogue of the Library of Congress: Authors,* the first and only general author catalog published by the Library of Congress, called by his bibliographer "the first fruits of the service of Mr. Spofford on the staff of the Library" and by Mr. Spofford himself as "the one desideratum of a large library, an alphabetical author catalogue."

The thick quarto in which this catalog appeared was for the next decade regularly and promptly supplemented by annual lists of additions; but no matter how prompt, there were always a multiplicity of books to be consulted. In any case, as acquisitions multiplied the regularity and promptness ceased, and the book-form catalog, as in other libraries at the period, gradually gave way to a card catalog, involving a long transition period, lasting even until our own days, of multiple locations for search.

The situation with respect to subject access was even worse. Dr. Spofford's plan included a subject catalog, and actually a *Subject Catalog* in two volumes was published in 1869—but that was five years later.

The specialist periodical literature was as inaccessible as the general literature. Reuss' *Repertorium* indexed the academy publications to 1800, but the Royal Society's *Catalogue of Scientific Papers,* which was to continue the story for the 19th century, did not commence until 1867, and then with authors only. Kerl's *Repertorium,* beginning in 1823, analyzed a number of the technical journals, mostly continental, but including a number of British publications, and in the 1860's it listed *Scientific American* and *Stillman's journal.*

Perhaps the best characterization of a reference collection in 1864 is supplied by Dr. Spofford's list of approximately 650 titles for a reference collection, which he prepared for the 1876 report on *Public Libraries in the United States of America.* The vast majority of the works he there recommended had been published *since* 1864.

How, then, did Dr. Spofford conduct reference work at the earlier date? One gathers, through his complete familiarity with the collection. This was acquired in several

ways—by handling the books at several stages on their way into the collections; by continuous use of them in giving reference service and in *interpreting* the collection (the word is his); and by his use of them as sources of material for his innumerable contributions to almanacs, encyclopedias, libraries of wit and humor, libraries of choice literature, of historic characters, of political science, etc.

In December 1895 Dr. Spofford submitted to the Joint Committee on the Library a special report discussing the prospective organization of the library in its new building. This was printed as Senate Document 7, 54th Congress, 1st Session. At pages 11-13 he detailed his duties. This is an incredible list filling nearly two pages of 10-point type and describing two completely separate jobs, one as Librarian of Congress and another as Register of Copyrights. Just one of the duties of the first position was the supervision of the cataloging with final revision of titles and decision of doubtful cases; just one of the duties of the second was the maintenance of an index to the some 60,000 copyright entries per year, not only by authors and publishers but also by subjects, though this was not stipulated by law. Meanwhile he was required to furnish books and information to Congressional and other readers, to conduct the special searches incident thereto, and to answer the reference mail. It is apparent that, in spite of a subordinate staff of 37 assistants, he lived on terms of greatest intimacy with the collection, which he had watched grow from 70,000 to 725,000 volumes; he had made the principal decisions at all stages. It all added up to his being a great reference librarian but one who could work without dependence upon apparatus, because he had been compelled to do so.

But by 1897, when Dr. Spofford stepped down to become Chief Assistant Librarian, a new day in reference work had dawned. In innumerable categories in which deficiency had been more or less utter chaos at the earlier period, there was now some instrument to facilitate either direct access to the information or bibliographic access to a potential source.

And an even brighter day was in prospect. Bibliographic planning was in the air. The American library world had hammered out certain norms and standards with respect to both the hardware and software of cataloging and was actively seeking a central source of cataloging information in standardized disseminable form. The Royal Society of London was planning to enlist international cooperation toward the massive effort, which resulted in the ill-fated *International Catalogue of Scientific Literature.* Otlet and La Fontaine were convening the International Congresses of Bibliography, planning the world catalog at Brussels and laying the foundation for the International Federation for Documentation and the Universal Decimal Classification.

Spofford's successor as Chief Assistant Librarian was Appleton Prentiss Clark Griffin who had his training at the Boston Public Library and the Boston Atheneum. Although he had been appointed to LC's service by Dr. Spofford himself, he was of another generation of reference librarians. He, too, was a great reference man, and of course he had complete respect for the apparatus. The fact was that never again would a librarian be able to achieve intimacy with a collection of three quarters of a million volumes as Dr. Spofford had done, or to exploit its contents under similar conditions.

Yet I cannot help thinking that Dr. Putnam did Dr. Spofford's attitude to the apparatus less than justice. The fact that he published an author catalog of the collection in the very first year of his librarianship, and a subject catalog 5 years later, that he kept a subject record of copyrights though not required to do so by law, that he contributed the sixth largest number of entries to Poole—all this suggests to me that Dr. Spofford had great respect for the apparatus, but that, having to get along without it, he substituted for it so effectively that he gave the impression of having no use for it. The fact seems to be that as much as almost any man, he helped create the apparatus his successors inherited.

The Second Age

When I was an assistant at the reference desk, we were aware that the bibliographic millennium had not yet arrived, but we were confident that it was on its way. Every day bibliography became better. In 1927 came the first edition of the *Union List of Serials* and

the other Gregory lists thereafter; then the National Union Catalog began to take form, the *Index Bibliographicus* appeared, and Earl Gregg Swem's epochal *Virginia Index.*

A principal way to improve reference work was obviously to improve bibliography, and each of us had his private bibliographic project. These not only served to occupy spare time and to motivate browsing that might otherwise have been aimless but also gave prestige. Of course, many collections of useless cards were generated, but some achieved lasting value—there was an index to Siebmacher, another index to biographies in local histories, a checklist of American almanacs 1639-1800, a bibliography of Alaska, and the reconstituted inventory of Thomas Jefferson's library.

Of course, the same thing was going on all over the country. The Junior Members Round Table in 1939 decided that something should be done about all this local bibliographic industry; this resulted in the publication in 1947 by Faxon of Norma Olin Ireland's *Local Indexes,* a list of some 8,000 unpublished indexes available in libraries throughout the United States. I have asked for this book at many a reference desk, but though I have occasionally found knowledge of it, I have never found it close at hand. The fact is that an unpublished index in another library is a last resort in reference work.

But bibliographical publication was becoming easier all the time. The sight barrier of letterpress had been broken first by the stencil process, then by offset lithography, and photo-offset was on the way. Without photo-offset lithography the vast majority of current bibliographic publication would not exist: we would have neither the bibliographies and catalogs resulting from mounted cards (like the G. K. Hall catalogs) and from mounted and shingled cards (like the LC publications), nor those created by the sequential camera (like *Nuclear Science Abstracts*) nor those that result from punched card and computer line print-out (like the various KWIC indexes) nor those that are the product of the photo composing machine (like the new *Index Medicus*).

The salient characteristics of bibliographic work in recent years have been, on the one hand, the enormous proliferation of bibliographic publication, so that a new concentration of interest, e.g., on lasers, finds almost immediate response in an abstracting service; and, on the other, the great technical advances that have made it possible for services such as the British Museum *Catalog of Printed Books* and the *Index Medicus* to break the economic barriers that previously constrained them.

All through the period there has been bibliographical planning. When the Royal Society's great scheme was disrupted by World War I, the Society retired from the field but returned to it, with a briefly catalytic and useful effect, in 1948. In the early 1920's the League of Nations spun off the International Institute of Intellectual Cooperation, which prepared the way for Unesco. Among other things it sponsored Godet's *Index Bibliographicus.* In 1923 the American Library Association established its Committee on Bibliography, which soon had a project in the National Union Catalog, but which has for the most part been looking for tasks ever since. At the end of the 1920's the International Federation of Library Associations was born; both it and the International Federation for Documentation, the end-product of Otlet and La Fontaine's Congresses on International Bibliography that commenced in the 1890's, have been planning desultorily ever since. At the end of the 1930's, at the urging of the Serials Committee, ALA established a Joint Committee on Indexing and Abstracting in the Major Fields of Research, representing some ten organizations including the National Academy of Sciences, American Chemical Society, Joint Engineers Council and others. But in those days it was practically impossible to interest the scientific organizations in bibliographical problems (nowadays the scientists accuse us of having been "asleep at the switch") and Mrs. Cowles (the chairman) finally threw in the sponge, recommending that the federal government take over the major indexing and abstracting tasks. This was in 1945. Almost in the same month Dr. Vannevar Bush was making a similar recommendation, but from a very different motive, in his report to the present, *Science the Endless Frontier.*

When in 1946 Unesco was organized, it was discovered that the one characteristic in

common among the disciplines represented in its founding was a need for effective bibliographic service. It looked for a time as though Unesco might turn into a bibliographic factory. It has, as a matter of fact, supported an immense amount of useful bibliographic activity, but it has attempted to put its major effort into planning. For this purpose it commissioned a report from the Library of Congress and convened an international conference in 1950; it has since developed an International Advisory Committee on Bibliography, Documentation and Terminology, of which I, Ralph Shaw and currently Melvin Voigt have been members. The results have, I think it is fair to say, not been world-shaking.

In recent years, and even months, bibliographic planning has been taken up with the vigor and enthusiasm of novelty at the seat of the federal government. The National Science Foundation has some statutory responsibilities in this area but has been proceeding very deliberately. Not so Dr. Stafford Warren, the President's Adviser on Mental Retardation, who produced almost overnight a plan that agitated both the governmental and non-governmental community all last year. It now seems to have deferred to the activities of another group, the Committee on Scientific and Technological Information of the Federal Council of Science and Technology.

Finally, with respect to bibliographic planning I should mention that the Committee on Bibliography of the Reference Services Division of ALA has taken up once more the problem of establishing—perhaps at the Library of Congress—a bibliographic clearinghouse; that at the state level there are plans —such as that in New York—for coordinating reference resources and services over a wide area; and that a subcommittee of the Library Research Committee of the (British) Library Association has proposed a national bibliographic center and clearinghouse to be under the supervision of a national bibliographical advisory council.

The Third Age

So much for the present. What about the future? I think that the experience of the recent past suggests that bibliographical improvement is only in the rarest cases to be expected from bibliographic planning as such. It is more likely to proceed from attempts to improve accessibility to specific classes of material. The National Union Catalog, the *Union List of Serials,* the *National Union Catalog of Manuscript Collections,* the *Index Medicus,* though probably all essential elements in any national bibliographic plan, did not result from general bibliographic planning but rather from concern for access to books, periodicals, manuscripts, and medical literature.

What are the consequences of this conclusion for reference librarians? I would say that they argue that reference librarians should support projects for bibliographic improvement for specific categories of materials. I doubt whether I would generally advocate personal bibliographical projects—they are too likely to end up as collections of cards for the trash bin—but rather concerted group efforts. Reference librarians will know where improvement is most needed and where it can be most efficiently effected. With modern techniques of publication and with the present enlarged market, it should not be impossible to publish any worthwhile bibliographical tool.

But experience suggests that a still more important factor has been operative toward bibliographic improvement, namely, technological improvement. I have already mentioned the enormous contributions to bibliography of the mounted or shingled card technique when married to photo-offset lithography. Earlier improvement developments were the invention of the unit catalog card, which opened a new era in the efficiency of catalogs, and the Linotype slug on which the H. W. Wilson Company's bibliographic empire—with all that it has contributed to the advantage of reference work—was founded.

Of the new techniques that are likely to affect bibliographic communication in the immediate future the most important is, of course, that of the computer. We see some of its lesser results already in the KWIC index and the machine-made concordance. Current medical bibliography is already making use of the MEDLARS tapes of the National Library of Medicine. Numerous other information-retrieval projects, such as that of the Center for Documentation Research at Western Reserve University, have for

some time been preparing bibliographies by computer techniques. But these have all been mechanized and souped-up analogs of activities that have traditionally been conducted manually. They have extended, but hardly added a new dimension, to the reach of the reference librarian.

But now the Library of Congress has announced that it will in the near future begin to issue its catalog cards in computer-readable form. It may be foreseen that this will result in genuinely adding a new dimension to the reference librarian's bibliographic reach. For, when libraries can easily secure bibliographic information in machine-readable form, they will be encouraged to experiment with it. Soon they will have machines for processing it and they will become used to it. At this point one library may begin to communicate with the catalog of another library, not by voice, but by some data-processing mechanism (e.g., a typewriter), furnishing or procuring information in machine-readable form to be converted to legible form. At this point the catalogs that can be thus linked become one catalog and their libraries one library for purposes of bibliographic access. And with the increased capabilities of the reference staff for providing bibliographic access, the demands of inquirers may likewise be expected to grow.

At the next step, inquirers may be expected to demand to see the materials about which they have been given bibliographic information, and if the material is not available locally, it will have to be fetched from afar. Is it likely that users will continue to be satisfied with the slow speed of service imposed by interlibrary loan of originals, or by the provision of photocopy sent by mail in lieu of originals? The question answers itself; it is unacceptable, even if comprehensible, that libraries should still depend upon the mails for transmission of information in a day in which news photographs have been regularly transmitted by wire for 40 years and pictures in motion have been brought into the home without even wires for 30. It is, of course, only high costs that prevent the application of telefacsimile to library uses today. If and when those high costs can be reduced or overcome, the libraries of the world will be much further along the road to becoming—for reference purposes—one library.

SPOTTED

● *Whatever else a special librarian may be, his versatile nature is always called upon. Loretta Kiersky, Librarian at Air Reduction Company, was rewarded for hers—the Gal Friday Award from the Herb Oscar Anderson ABC radio show.* ● *Serious meetings can always do with some humorous self-examination, and at an ADI meeting, Gregory Abdian remarked that an official of DDC said he often feels like an ACORN—an acronym-oriented nut. Later Eugene B. Jackson observed that with the growing importance of science citation indexes, some eager-beaver types appear to be forming Citation Clubs—"You cite me, I'll cite you."* ● AB *has exposed a Victorian side of the Library of Congress—the softcover edition of "Sex and the Single Girl" was given the Dewey classification number 301.4243, the category for prostitution.* ● *Automation has already paved the way for information storage and retrieval, but questionnaires and ballots will soon look like Swiss cheeses carried in suitcases. IBM has devised a six-pound, $185, suitcase-size voting device that allows the voter to place a specially prepared punch card into the Votomatic and record his choice by marking the proper holes with a stylus. The cards can then be processed for a quick election result. The same punch-card technique using other cards can be applied to censuses, surveys, testing, interviews, and record-keeping.* ● *In September, President Johnson signed the State Technical Services Act, which, he noted, would have prevented the situation in Appalachia 30 years ago, and if now used effectively, will prevent other Appalachias. The bill's principal purpose is to promote economic growth by encouraging the rapid and systematic dissemination of scientific and technical information to private industry. Colleges, technical schools, and nonprofit agencies will distribute, on request, technical information and act as consultants to private businesses.* ● *For coffee-break mulling: A program is any assignment that can't be completed by one telephone call.* ● *A recent survey says the average business letter costs $2.44 from dictation to mailing. Instead, forms, telephoning, and automation can help (replace?) "Miss Jones."*

References are given in four sections: *1)* a listing of sources of information, including associations and organizations; *2)* books and reports; *3)* serial titles; and *4)* a selection of current articles.

Bibliography on Air and Water Pollution

MARIE S. RICHARDSON

MANY ORGANIZATIONS and associations are vitally concerned with the problems of air and water pollution. The problems are not confined to the United States but are world wide (see Sec. III—1, 3, 6, 8, 11, 19).

The public, generally speaking, is aware that preventive measures are being initiated to reduce the hazards of air and water pollution (see Sec. IV—5, 12, 22, 23). Many legislative acts have been passed as preventive measures at the local, state, and federal government levels (see Sec. IV—12, 13, 18). The daily press is an excellent source of current awareness of the activities in air and water pollution.

On January 18, 1966, the Connecticut Valley Chapter of the Special Libraries Association held its second meeting, which was open to the public, on air pollution and water resources. William S. Wise, Director of the Connecticut State Water Resources Commission, reviewed past developments and discussed the future plans for the State of Connecticut in its efforts to conserve and develop its water resources. George Collins of the Travelers Research Center, Hartford, Connecticut, spoke on the sources and effects of air pollution and showed slides of some of the equipment now being used to help reduce this problem. E. D. Kane of Combustion Engineering, Inc., Windsor, Connecticut, discussed various methods and costs of salt removal from water. Dr. J. H. Fernandes of Combustion Engineering, Inc., as moderator of the panel, summarized the talks by reviewing the pertinent problems, the progress, and technological advances being made in solving these problems.

Mrs. Richardson is Head Librarian of the Corporate Library System of Combustion Engineering, Inc., Windsor, Connecticut. She has been very active in SLA's Connecticut Valley Chapter and has just assumed the Presidency for 1966-67.

Combustion Engineering, Inc. is one of the largest manufacturers of power boiler equipment in the world. The boilers can be designed to burn a variety of fuels: *1)* fossil fuels—coal, oil, and gas, *2)* waste products—bagasse, furfural, cotton seed hulls, corn cobs, bark, garbage and sewage, etc., and *3)* nuclear. Boilers in operation or being constructed at the present time range in size from 10,000 lb/hr to 7,000,000 lb/hr of steam. The needs of personnel at Combustion Engineering, Inc., actively engaged in reducing pollution, requires the library to maintain a complete and continuously updated bibliography on air and water pollution.

It is hoped that the bibliography that follows will offer some assistance to those who are planning to start or have just begun a collection of information on air and water pollution. We have called upon the sources of information listed in Section I and have found them to be helpful and cooperative. Approximately three-fourths of the material listed in Sections II, III, and IV are on file in our library.

Section I: Sources of Information on Air Pollution and Water Resources

1. Air Pollution Control Association (APCA), 4400 Fifth Avenue, Pittsburgh, Pennsylvania 15213
2. Air Pollution Control District, Public Information and Education Division, 434 South San Pedro, Los Angeles, California 90012
3. American Industrial Hygiene Association, 14125 Prevost, Detroit, Michigan 48233
4. American Meteorological Society, 45 Beacon Street, Boston, Massachusetts 02108
5. American Society for Testing and Materials, 1916 Race Street, Philadelphia, Pennsylvania 19103

6. American Society of Mechanical Engineers, 345 East 47th Street, New York, New York 10017
7. American Water Works Association (AWWA), Two Park Avenue, New York, New York 10016
8. Bay Area Air Pollution Control District, 1480 Mission Street, San Francisco, California 94103
9. Federal Water Quality Association (FWPA), Public Health Service, Washington, D. C.
10. Franklin Institute, Laboratories for Research and Development, Benjamin Franklin Parkway at 20th Street, Philadelphia, Pennsylvania 19103
11. Mellon Institute, 4400 Fifth Avenue, Pittsburgh, Pennsylvania 15213.
12. National Citizens Committee for the World Health Organization (International), 1790 Broadway, New York, New York 10036
13. National Society for Clean Air, Field House, Breams Buildings, London E.C.4, England
14. Robert A. Taft Sanitary Engineering Center, Cincinnati 22, Ohio
15. Scientists' Institute for Public Information, 30 East 68th Street, New York, New York 10021
16. U. S. Department of Health, Education, and Welfare, Inquiries Branch, Office of Information and Publications, Public Health Service, Fourth and Independence Avenue, Southwest, Washington, D. C. 20201
17. U. S. Department of the Interior, Office of Water Resources Research, Washington, D. C.
18. Water Information Center, Inc., 44 Sintsink Drive, Port Washington, New York 11050
19. Water Pollution Control Federation, 3900 Wisconsin Avenue, Northwest, Washington, D. C. 20016

Section II: Books and Reports

1. American Association for the Advancement of Science. *Air Conservation* (Publication No. 80). Washington, D. C.: 1965.

The report of the Air Conservation Commission of the AAAS.

2. American Geophysical Union, Section of Meteorology, Committee on Atmospheric Chemistry. Ed. by James P. Lodge, Jr. *Atmospheric Chemistry of Chlorine and Sulfur Compounds.* Washington, D. C.: American Geophysical Union of the National Academy of Science, National Research Council, 1959.

Proceedings of a symposium held at the Robert A. Taft Sanitary Engineering Center, Cincinnati, Ohio, November 4-6, 1957. Conducted under the joint sponsorship of the U.S. Public Health Service and the American Geophysical Union.

3. American Institute of Chemical Engineers. *Pollution and Environmental Health.* New York: 1960.

4. American Public Health Association. *Health Officials Guide to Air Pollution Control.* Washington, D. C.: 1962. 56 p.

5. American Society for Testing and Materials. *ASTM Standards on Methods of Atmospheric Sampling and Analysis.* Philadelphia: October 1962. 134 p.

Definitions of terms, recommended practices, and methods of testing; methods apply to dustfall, odor in atmosphere, industrial water, and waste water, odorous vapors, gaseous combustion products, particulate matter, etc.

6. Camp, Thomas R. *Water and Its Impurities.* New York: Reinhold, 1963. illus.

7. Clark, J. W., and Viessman, W., Jr. *Water Supply and Pollution Control.* Scranton 15, Pa.: International Textbook, 1965.

8. Faith, W. L. *Air Pollution Control.* New York: John Wiley, 1959. illus.

9. Graham, Frank, Jr. *Disaster by Default: Politics and Water Pollution.* Philadelphia: (Evans) Lippincott, 1966.

10. Grossmann-Cooper, Anna. *Air Pollution Publications. A Selected Bibliography 1955-1963* (Public Health Service Publication no. 979). Washington, D. C.: U. S. Department of Health, Education, and Welfare, Public Health Service, Division of Air Pollution, 1964. 174 p. (Available from Government Printing Office)

11. Herber, Lewis. *Crisis in Our Cities.* Englewood Cliffs, N. J.: Prentice-Hall, 1965.

12. Herfindahl, Orris C., and Kneese, A. V. *Quality of the Environment.* Baltimore: Johns Hopkins, 1965.

13. *International Conference on Water Pollution Research,* 1st 3 vols. London: 1962. illus. maps.

Vol. 1 edited by B. A. Southgate; vol. 2 by W. W. Eckenfelder; vol. 3 by E. A. Pearson; includes bibliographies.

14. Jacobs, Morris B. *Chemical Analysis of Air Pollutants,* vol. 10, *Chemical Analysis.* New York: John Wiley, 1960. illus.

15. Klein, Louis. *River Pollution,* 2 vols. New York: Academic Press, 1959.

Bibliography.

16. Kneese, Allen V. *Economics of Regional Water Quality Management.* Baltimore: Johns Hopkins, 1964.

17. Kneese, Allen V. *Water Pollution.* Baltimore: Johns Hopkins, 1961.

18. Leighton, P. A. *Photochemistry of Air Pollution.* New York: Academic Press, 1961. illus.

19. Lewis, Howard R. *With Every Breath You Take.* New York: Crown, 1965.

The poisons of air pollution, how they are injuring health, and what must be done about them.

20. Magill, Paul L., et al., eds. *Air Pollution Handbook.* New York: McGraw-Hill, 1956.

21. Mallette, Frederick S., ed. *Problems and Control of Air Pollution.* New York: Reinhold Publishing Corp., 1955.

Proceedings of the First International Congress on Air Pollution held in New York City, March 1-2, 1955.

22. Mantell, H. N. *Industrial Incentives for Water Pollution Abatement.* New York: Institute of Public Administration, February 1965. 95 p.

Discusses the industrial pollution problem, the role of government and industry, enforcement, the economic aspects of pollution, federal incentives, state and local incentives, and the facilitating of public treatment of industrial wastes.

23. Meetham, A. R. *Atmospheric Pollution: Its Origins and Prevention,* 3rd rev. ed. Oxford and New York: Pergamon Press, 1964.

24. MILLS, Clarence Alonzo. *This Air We Breathe.* Boston: Christopher Publishing House, 1962.
25. MURPHY, Earl F. *Water Purity: A Study in Legal Control of Natural Resources.* Madison: University of Wisconsin Press, 1961.
26. NATIONAL ASSOCIATION OF MANUFACTURERS. *Water in Industry.* New York: Association and the Chamber of Commerce of the United States, January 1965. 81 p.

In cooperation with the National Technical Task Committee on Industrial Wastes.

27. NATIONAL SOCIETY FOR CLEAN AIR, Technical Committee. Sulphur Dioxide. London: 1964. 32 p.

Presented at the NSCA Conference, Harrogate, 1964. An examination of sulphur dioxide as an air pollutant. Bibliography.

28. OFFICE OF WATER RESOURCES RESEARCH. *Water Resources Research Catalog,* Part 1: *Federally Supported Research in Progress* (OWRR-1/1). Washington, D. C.: U.S. DEPARTMENT OF THE INTERIOR, February 1965.

Prepared by the Science Information Exchange of the Smithsonian Institution at the request of the Office of Water Resources Research, Department of the Interior. Includes subject index, corporate author index, principal investigator index, and supporting agency index.

29. OLSON, L. V. *Standards by Government for Air and Water Pollution as Related to Smelting and Refining Industry* (Engineering Experiment Station Circular 29). Corvallis: Oregon State University, September 1963, p. 151-60.

Discussion of federal and state roles in regulation of air and water pollution by metals, sulfur dioxides, and other products of smelting and refining industry; mention is also made of possible toxic effects on cattle of nitrates used in mining for blasting purposes.

30. PASQUILL, Frank. *Atmospheric Diffusion.* Princeton, N. J.: Van Nostrand, 1961. illus.
31. RICKLES, Robert N. *Pollution Control.* New York: Noyes Development Corp., 1965.

Includes bibliographical references.

32. STANFORD RESEARCH INSTITUTE. *Chemical Reactions in the Lower and Upper Atmosphere.* New York: John Wiley (Interscience), 1961.

Proceedings of an international symposium arranged by SRI in San Francisco, California, April 18-20, 1961. Bibliographies.

33. STERN, A. C., ed. *Air Pollution,* 2 vols. New York: Academic Press, 1962.
34. *Symposium on Air-Pollution Measurement Methods, Los Angeles, 1962* (American Society for Testing and Materials Special Technical Publication no. 352). Philadelphia: American Society for Testing and Materials, 1963.

Papers presented at the fourth Pacific area national meeting, ASTM, Los Angeles, California, October 5, 1962.

35. THRING, Meredith Wooldridge. *Air Pollution.* London: Butterworths Scientific Publications, 1957.

Based on papers given at a conference held at the University of Sheffield, September, 1956.

36. WORLD HEALTH ORGANIZATION. *Air Pollution.* New York: Columbia, 1961.

Section III: Serial Publications*

1. *APCA Abstracts;* contains abstracts from 800 technical journals from all over the world. 1955. m. Air Pollution Control Association, 4400 Fifth Ave., Pittsburgh, Pa. 15213. abstr. Indexed: Fuel Abstr.
2. *APCD Report.* 1955. m. Ed. Robert M. Barsky. Air Pollution Control District, Public Information and Education Division, 434 S. San Pedro, Los Angeles 13, Calif.
3. *Air and Water Pollution.* 1958. m. Pergamon Press, Oxford, England, and 122 E. 55th St., New York, N. Y. 10022. adv. bibl. bk.rev. charts. illus. Indexed: Biol. Abstr.; Chem.Abstr.; Eng. Ind.
4. *Air in the News.* 1963. m. Maurice Pinover, Box 132, Hewlett, L. I., N. Y. illus.
5. *Air Pollution Control Association. Journal;* devoted to air purification. 1951. m. Ed. Arnold Arch. 4400 Fifth Ave., Pittsburgh, Pa. 15213. adv. bibl. charts. illus. Indexed: Chem.Abstr.; Eng. Ind.; Fuel Abstr.; Ind.Med.
6. *Atmospheric Pollution Bulletin.* (In 3 sections, 1, 2 & 3) (Supplement) 1932. Sections 1 & 3 m., Section 2, s-m. Warren Spring Laboratory (D.S.I.R.) Gunnels Wood Rd., Stevenage, Herts, Eng. abstr. stat. (Section 3 is a summary of published information on Air Pollution).
7. *Clean Air Quarterly.* 1957. q. Bureau of Air Sanitation, State Dept. of Public Health, 2151 Berkeley Way, Berkeley 4, Calif. charts. index.
8. *Fumi & Polveri.* 1961. m. Ed. Uberto V. Stefanutti. Publiteca Europea, Via Oxilia 22, Milan, Italy. adv. bibl. charts. illus. pat. tr.lit.
9. *Smog;* il problema dell'inquinamento. 1956. q. Dir. Carlo Z. Salazar. Lega Italina Contro Fumi e Rumori, via Garibaldi 25, Turin, Italy. bibl. charts. illus.
10. *Smokeless Air* (Year Book, National Society for Clean Air). 1929. q. Ed. Arnold Marsh. Field House, Breams Bldgs., London E.C.4, England. adv. bk.rev. charts. illus. pat. tr.mk. Indexed: Br.Tech.Ind; Fuel Abstr.
11. *Staub.* 1940. m. VDI-Verlag GmbH., Bongardstrasse 3, 4 Düsseldorf, Germany. abstr. adv. bk. rev. charts. illus. pat. index. Indexed: Chem. Abstr.; Eng.Ind.; Fuel Abstr.
12. *American Water Works Association. Journal.* 1914. m. Ed. Raymond J. Faust. 2 Park Ave., New York, N. Y. 10016. abstr. adv. bibl. bk.rev. charts. illus. index. cum.index: 1881-1944 (in 2 vols.). Indexed: A.S.&T.Ind.; Biol. Abstr.; Chem.Abstr.; Eng.Ind.; Met.Abstr.
13. *British Waterworks Association. Journal.* 1915. m. 34 Park St., London W.1, England. adv. bk. rev. charts. illus. index. Indexed: Br.Tech.Ind.
14. *California Water Pollution Control Association. Bulletin.* 1964. q. Loyola University, 7101 W. 80th St., Los Angeles, Calif.

---

* *Ulrich's International Periodicals Directory,* 11th edition, vol. I. Ed. by Eileen C. Graves. New York: R. R. Bowker Company, 1965. p. 35-6; 397-9.

15. *Clean Water Report.* 1964. m. Ed. Leonard A. Eiserer. Business Publishers, Inc., 804 Roeder Rd., Silver Spring, Md.

16. *Delaware Basin Bulletin.* 1959. 5 times yr. Ed. Frank W. Bressler. Water Resources Association of the Delaware River Basin, 21 S. 12th St., Philadelphia, Pa. 19107. Charts. illus. cum.index: 1959-1964.

17. *Delaware Water Supply News.* 1936. q. Ed. Martin T. Geraghty. Board of Water Supply, City of New York, 120 Wall St., New York, N. Y. 10005. charts. illus.

18. *Effluent and Water Treatment Journal.* 1961. m. Ed. A. G. Davies. Thunderbird Enterprises Ltd., 140 Cromwell Rd., London S.W. 7, England. adv. charts. illus. tr.lit. index to editorial material annually. Indexed: Br.Tech.Ind.; Chem.Abstr.; Fuel Abstr.

19. *European Federation for the Protection of Waters. Information Bulletin.* (Text in English, French, German and Italian) 1958. 1-2 nos. per year. Kürbergstrasse 19, Zurich 49, Switzerland. charts. illus.

20. *Ground Water* (National Water Well Association). 1963. q. Ed. William C. Walton. Water Well Journal Publishing Co., 811 N. Lincoln Ave., Box 222, Urbana, Ill. abstr. bibl. charts. illus. index.

21. *Institution of Water Engineers, Journal.* 1947. 7 times yr. Ed. W. O. Skeat. Parliament Mansions, Abbey Orchard St., London S.W. 1, Eng. adv. bibl. bk.rev. charts. illus. index. Indexed: Br. Tech.Ind.; Chem.Abstr.; Eng.Ind.

22. *New England Water Works Association, Journal.* 1882 q. Ed. James J. Matera. 73 Tremont St., Boston, Mass. 02108. adv. illus. index. cum. index every 10 years; v. 1-78 (1882-1964). Indexed: Chem.Abstr.; Eng.Ind.

23. *Pure Water.* 1949. irreg. Ed. James C. Vaughn. Chicago Bureau of Water, South District Filtration Plant, 3300 E. Cheltenham Place, Chicago, Ill. 60649. charts. illus. index.

24. *Rockwell Water Journal;* devoted to the operation and management of water works and sewage treatment plants. 1908. bi-m. Ed. Cliff Thompson. Rockwell Manufacturing Co., 400 N. Lexington Ave., Pittsburgh 8, Pa. adv. charts. illus.

25. *Southwest Water Works Journal.* 1919. m. Ed. Bob Gresham. Southwest Section, American Water Works Association, 306 E. Adams Ave., Temple, Tex. adv. illus. tr.lit. Indexed: Chem. Abstr.

26. *Wasser Luft Und Betrieb.* 1957. m. Krausskopf-Verlag für Wirtschaft GmbH. & Co., Lessingstr. 12-14, Mainz, Germany. adv. charts. illus. index. Indexed: Fuel Abstr.

27. *Water;* leading paper on drinking water supply and waste water treatment. 1917. s-m. Moormans Periodieke Pers. N.V., Zwarteweg 1, The Hague, Netherlands. adv. illus. index.

28. *Water and Sewage Works.* 1890. m. Ed. V. W. Langworthy. Scranton Publishing Co., 35 E. Wacker Dr., Chicago 1, Ill. illus. tr.lit. index. Indexed: A.S.&T.Ind.; Biol.Abstr.; Chem.Abstr.; Eng.Ind.; Fuel Abstr.

29. *Water and Waste Treatment.* 1948. bi-m. Ed. P. I. Craddock. Dale, Reynolds & Co., Ltd., 2 Broad St., Place, London E.C.2, Eng. adv. bibl. bk. rev. charts. illus. tr.lit. index covering 2 yrs. Indexed: Br.Tech.Ind.; Chem.Abstr.

30. *Water and Water Engineering.* 1899. m. Ed. D. Wilkinson. Colliery Guardian Co. Ltd., 30 Furnival St., London E.C.4, Eng. abstr. adv. bk. rev. illus. stat. tr. lit. index. Indexed: Br.Tech. Ind.; Chem.Abstr.; Eng.Ind.

31. *Water Newsletter;* water supply, waste disposal conservation. 1958. s-m. (Supplement: Research and Development News. m) Water Information Center, Inc., 44 Sintsink Drive E., Port Washington, N. Y. 11050.

32. *Water Pollution Abstracts.* (Dept. of Scientific and Industrial Research) 1927. m. H. M. Stationery Office, Atlantic House, Holborn Viaduct, London E.C.1, England. abstr. index. Indexed: Chem.Abstr.

33. *Water Pollution Control Federation. Journal.* 1928. m. Ed. Ralph E. Fuhrman. 3900 Wisconsin Ave., N.W., Washington, D. C. 20016. abstr. adv. bk.rev. illus. index. cum.index: vol. 1-30 (1928-1958) Indexed: A.S.&T.Ind.; Biol.Abstr.; Chem. Abstr.; Eng.Ind.; Fuel Abstr.

34. *Water Power.* 1949. m. Ed. Graham R. Bamber. Tothill Press Ltd., 161-166 Fleet St., London E.C.4, England. abstr. adv. bk.rev. charts. illus. index. Indexed: Br.Tech.Ind.; Eng.Ind.; Fuel Abstr.; Sci.Abstr.

35. *Water Resources Research.* 1965. q. Eds. Walter B. Langbein & A. V. Kneese. American Geophysical Union, 1145 Nineteenth St., N.W., Washington, D. C. 20036. charts. illus. index.

36. *Water Supply Studies.* irreg. (1-2 nos. per year) Academia Republicii Populare Romine, Calea Victoriei 125, Bucharest, Rumania. (Subscriptions to be sent to "Cartimex," Box 134-135, Bucharest, Rumania.)

37. *Water Works and Wastes Engineering* (Formed by the union of *Water Works Engineering* and *Wastes Engineering*). 1944. m. Reuben H. Donnelly Corp., 466 Lexington Ave., New York, N. Y. 10017. Indexed: A.S.&T.Ind.; Biol. Abstr.; Chem.Abstr.; Eng.Ind.

38. *Water Works News.* vol. 29, 1964. bi-m. Ed. Charles L. Miller. Michigan Dept. of Health, Water Supply Section, Division of Engineering, Lansing, Mich. 48914. illus.

39. *Zeitschrift Für Wasserrecht.* 1963. q. Ed. Prof. Dr. Gieseke. Carl Heymanns Verlag KG, Gereonstrasse 18-32, Cologne 5, Germany. adv.

Section IV: Articles*

1. ALSHULLER, A. P. Air Pollution. *Analytical Chemistry,* vol. 35, no. 4, April 1963, p. 3R-10R.

Review covers period from January 1961, through October 1962; subjects include automatic withdrawal of samples at intervals, apparatus for monitoring sulfur dioxide, possibility of monitoring carbon monoxide and carbon dioxide, devel-

* Some of the abstracts listed here are taken directly from the referenced journal; others are from *Engineering Index* and *Fuel Abstracts and Current Titles.*

opment and evaluation of instruments for monitoring atmospheric fluorides, and U.S. Public Health Service stations that house group of monitoring instruments. 240 references.

2. BEAK, T. W. Biological Measurement of Water Pollution. *Chemical Engineering Progress,* vol. 60, no. 1, January 1964, p. 39-43.

Description of recent work in study of use of bottom-living invertebrates to measure pollution.

3. BLOOMFIELD, B. D. Air Pollution Control in Industry. *Air Engineering,* vol. 5, no. 6, June 1963, p. 24-6; vol. 5, no. 7, July 1963, p. 26-30; vol. 5, no. 8, August 1963, p. 28-30; vol. 5, no. 9, September 1963, p. 30-2, 34-6.

Problems of compliance, nuisance, hazard and health control, product recovery, and equipment application are discussed for solution of air pollution control in industrial processes; experience with various types of gas cleaning equipment on variety of industrial operations; air pollution control of coal burning power plants, open hearth furnaces, and foundry shakeouts. 31 references.

4. COHEN, J. B., and O'DONNELL, R. L. Analog Computer as Aid to Stream Self-Purification Computations. *Water Pollution Control Federation—Journal,* vol. 35, August 1963, p. 951-62.

Potentialities and application of low cost differential analyzer-type analog computer for predicting future water quality conditions in entire river basins containing many waste sources and tributary branches; computer has been modified to permit use as readily workable tool by personnel having interest in water quality aspects of problem without requiring background in electrical engineering desirable in more advanced phases of computer operation.

5. DAMMKOEHLER, Arthur R. Inventory of Emission for the City of Chicago. *Air Pollution Control Association, Journal,* vol. 16, no. 3, March 1966, p. 151-5.

A review of the methodology used in the development and implementation of comprehensive emission inventory survey with emphasis on manufacturing plants. This inventory, a major goal in Dynamic Air Resource Management Program for the City of Chicago, is a principal objective of a Five-Year Technical Assistance Agreement with the United States Public Health Service, Division of Air Pollution and Chicago's Department of Air Pollution Control. Information obtained through a 75% response from a questionnaire mailed to 7,312 manufacturing firms provided the basis for this inventory. Data in the delinquent firms were obtained from on-site evaluation by department engineers. This report also covers computer processing and tabulation of survey data.

6. EHLERS, Nelson J. Management's Stake in Water Pollution Control. *Chemical Engineering Progress,* vol. 6, no. 12, December 1965, p. 20-3.

Management not only has to set up the proper climate to have an effective plant control program, it has to convey a message to the public that it is not idly sitting by.

7. ELDRIDGE, E. F. Irrigation as Source of Water Pollution. *Water Pollution Control Federation—Journal,* vol. 35, May 1963, p. 614-25.

Water quality problems resulting from return flows from irrigation and their present and potential magnitude and significance are discussed; quantity of irrigation water involved and amount and courses of return flow are considered; most significant quality changes, namely increases in mineral content (salinity), in temperature, turbidity, color, taste, and in nutrients that promote aquatic growth, presence of nitrates in concentration of health significance, and potentially toxic quantities of sprays and herbicides are examined.

8. FRANKENBERG, T. T., and PERRY, H. Air Pollution from Power Plants and Its Control. *Combustion,* vol. 34, no. 8, February 1963, p. 28-33.

Review of air pollution problem with discussion of new factors associated with shift to larger individual units and to larger total plants; study of factors for determining stack height for larger plants.

9. GURNHAM, C. F. Control of Water Pollution. *Chemical Engineering,* vol. 70, June 10, 1963, p. 190-204.

Facets of typical plant program for prevention of water pollution; origins of pollution; wastes from industry; disposal of industrial wastes; significance of stream pollution; significance of sewer pollution, recovery or reuse of material; spillage and cleaning problems; blending vs. segregation; physical, chemical and biological treatment; survey of plant; problems of continuity; trends in pollution control.

10. HITCHCOCK, L. B. Air Sanitation Development. *Air Pollution Control Association—Journal,* vol. 12, no. 5, May 1962, p. 223-6.

Survey of literature and recent developments in research on composition of atmospheric environment through improved methods of detection, measurement, and monitoring and improved equipment for controlling pollutants from activities of both industry and public; application of silicone-treated glass filter bags in treatment of stack gases from cement plant; use of high energy scrubbers, particularly in steel industry. 26 references.

11. HOAK, R. D. Recovery and Identification of Organics in Water. *Air and Water Pollution,* vol. 6, November/December 1962, p. 521-38.

Problems encountered in recoveries and identifying organic substances present in natural water in minute concentration; among various analytical techniques employed, paper chromatography proved to be most useful for this purpose; experiments showed that generation of phenolics from decay or natural vegetation is governed to some extent by quality of aqueous substrate and that rate of biological dissimilation of natural phenolics is inversely proportional to their molecular complexity.

12. KATZ, Morris, and DROWLEY, W. B. Canadian Activities in Ambient Air Quality Criteria and Development of Standards. *Air Pollution Control Association, Journal,* vol. 16, no. 3, March 1966, p. 131-4.

Within recent years increasing attention has been directed to the determination of contaminant levels in urban and industrial areas involving par-

ticulate matter (dustfall, suspended matter and smoke), sulfur dioxide, hydrogen sulfide, fluorides, ozone or oxidant, oxides of nitrogen and polycyclic aromatic hydrocarbons. However, with regard to criteria and evaluation of effects, none of these pollutants has been studied as thoroughly as sulfur dioxide. Presently, three provinces in Canada have adopted acts or regulations dealing with the control of air pollution. The Ontario Act, passed in 1958 and amended in 1963 and 1964, is the most comprehensive in scope. The Damage by Fumes Arbitration Act of Ontario provides for the awarding of compensation where crops, trees, or other vegetation is damaged by sulfur fumes arising from the smelting or roasting of nickel-copper ore or iron ore or from the treatment of sulfides for the production of sulfur or sulfuric acid for commercial purposes. Regulations have also been enacted in Manitoba and Alberta. A provincial act is under consideration in Saskatchewan.

13. KENNEDY, Harold W. Legal Aspects of Air Pollution Control. *Public Health Reports,* vol. 79, August 1964, p. 689-98.

Resume of work in air pollution control by John A. Maga.

14. MCKINNEY, R. E., and PFEFFER, J. T. Effect of Biological Water Treatment on Water Quality. *Water and Sewage Works,* vol. 112, November 30, 1965, p. R181-8.

To insure reuse of water, biological systems are necessary to purify water to point where it can be discharged into available dilution water. Industrial and domestic use of water changes its chemical quality—especially in textile and pulp industries—and biological treatment is effective where large volumes of clean water are not available for dilution.

15. MEREDITH, H. H., Jr. Industrial Planning for Air Pollution Control. *Air Pollution Control Association, Journal,* vol. 15, no. 12, December 1965, p. 594-6.

Seven general planning concepts for air pollution control presented for industry's consideration.

16. MIDDLETON, John T. Man and His Habitat: Problems of Pollution. *Bulletin of Atomic Scientists,* vol. 21, March 1965, p. 18-22.

17. Pollution Control Engineering. *American Institute of Chemical Engineers Chemical Engineering Progress Symposium Series,* vol. 59, no. 45, 1963.

This volume includes the papers presented during two symposia of American Institute of Chemical Engineers' 54th Annual Meeting in New York. The first section contains a group of valuable papers under the heading, "The National Pollution Problem" and includes some views of industry, government, and interstate associations. A case history of water reuse and problems in air pollution in cities are presented.

18. SCHUENEMAN, J. J. Air Pollution Problems and Control Programs in United States. *Air Pollution Control Association, Journal,* vol. 13, no. 3, March 1963, p. 116-25.

Review of nature and extent of air pollution problems and efforts made by Public Health Service to cope with them; discussion of problem from national viewpoint indicating general nature and extent of existing state and local air pollution control programs. 39 references.

19. WEBB, H. J. Water Pollution Resulting from Agricultural Activities. *American Water Works Association Journal,* vol. 54, January 1962, p. 83-7.

Evaluation of role of fertilization practices, animal wastes, and pesticides; table shows comparative toxicity of chlorinated hydrocarbon and organic phosphorus insecticides to rats; ordinary processes of coagulation, sedimentation, and chlorination do not remove toxicity from water.

20. WHITEHEAD, R. C. River Pollution from Water Supply Viewpoint. *Water and Water Engineering,* vol. 68, May 1964, p. 179-84.

Review with illustrative examples from author's experience of river and effluent standards, maximum acceptable development, sewage treatment standards. 20 references.

21. WOLMAN, Abel. The Metabolism of Cities. *Scientific American,* vol. 213, no. 3, September 1965, p. 178-88, 190.

In the United States today attention is focused on shortages of water and the pollution of water and air. There is plenty of water, but supplying it requires foresight. Pollution calls for public economic decisions.

22. WRONSKI, W., et al. Air Pollution Considerations in the Planning and Zoning of a Large Rapidly Growing Municipality. *Air Pollution Control Association, Journal,* vol. 16, no. 3, March 1966, p. 157-8.

In the Municipality of Metropolitan Toronto, which covers 240 square miles, there are over 600,000 automobiles, 350,000 domestic and industrial oil and coal-burning installations, 5,000 apartment and industrial incinerators, and other numerous sources of air pollution, many of which create serious problems and contribute to the total air pollution level. The area includes 13 municipalities comprising Metropolitan Toronto and 13 additional surrounding urban and rural localities in an area of 720 square miles. The population of the planning area is 1,965,000 and is expected to increase to 2,800,000 by 1980. The Planning Board showed its recognition of the problem by a statement of policy designed to reduce pollution from fuel-burning equipment and incinerators, to develop a coordinated transportation system, to encourage central heating plants, and to control apartment development in mixed commercial areas. The Board advises and assists individual planning boards and building and property departments.

23. ZIMMER, C. E., and LARSEN, R. I. Calculating Air Quality and Its Control. *Air Pollution Control Association, Journal,* vol. 15, no. 12, December 1965, p. 565-72.

Air quality is shown as a function of averaging times of five minutes to one year for carbon monoxide, hydrocarbons, nitric oxide, nitrogen dioxide, nitrogen oxides, oxidant, and sulfur dioxide in Chicago, Cincinnati, Los Angeles, New Orleans, Philadelphia, San Francisco, and Washington, D. C.

The first Lilly library as it looked in 1891. Josiah K. Lilly, Sr. is standing, while Ernest G. Eberhardt, first chemist on the staff, is seated at an oak table.

A history of the growth of the scientific library of Eli Lilly and Company, pharmaceutical manufacturers in Indianapolis, which was one of the first firms in the United States to establish a special library. Five moves to larger quarters have been necessary, and the collection, staff, and variety of services offered have increased proportionately.

The Lilly Library — 76 Years

HELEN L. DAVIDSON

IT WAS IN May 1876 that Colonel Eli Lilly opened his own manufacturing establishment in a small building on West Pearl Street in downtown Indianapolis. His working force consisted of one man, who was chief compounder, and one woman, who bottled and finished the goods. A month later the Colonel's young son, Josiah Kirby Lilly, joined them as porter, engineer, miller, mass maker, bottle washer, and errand boy.

James E. Lilly joined his brother Eli in 1878 to become the first full-fledged Lilly salesman. It was at his suggestion that the company's first branch house was established in Kansas City in 1881. Another important event occurred in 1881 when the original property at the present McCarty Street Plant was purchased.

After attending night school for a time, J. K. Lilly enrolled at the Philadelphia College of Pharmacy. He graduated in 1882 and immediately came to the laboratory full-time, first as assistant superintendent, and within a few months, superintendent. The first chemist, a graduate of the Purdue School of Pharmacy, joined the firm in 1886.

Fourteen years after the business started, sales had passed the $200,000 mark, and there were approximately 100 employees. The building at the McCarty Street address had been remodeled and enlarged, and on

Mrs. Davidson is the Archivist of Eli Lilly and Company, Indianapolis, Indiana.

the second floor of the main building, over the general offices, a room had been designated for the library. The room was small as was the collection of books. The company inventory of December 31, 1890, lists the contents of the library room as follows:

1 Lot Miscellaneous Books
5 Volumes Botanical Books
27 Volumes A.P.A. Proceedings
1 Wardrobe
4 Office Chairs
1 Walnut Desk
1 Physicians Directory
1 Spittoon
1 Waste Basket
1 Whisk Broom
2 Library Cases
1 Sign
35 Yds. Linoleum
5 Yds. Rubber Matting
3 Window Shades
2 Oak Tables

Library Begun by Botanist

The Botanical Department, one of the first of its kind in the United States designed to serve a manufacturing pharmacist, was founded this same year. A graduate of Wabash College was hired as botanist, and a collection of about 6,000 specimens was purchased from a collector in North Carolina as the first step in assembling a general herbarium. A library which was described as "an armful of books," was begun by the botanist.

A budget allowance of $300 for the purchase of books was obtained by J. K. Lilly some three years after the Botanical Department was established, but it was not all spent that year. One of the first acquisitions was by barter when a collection of materia medica specimens was traded to the old Indiana Medical College in exchange for four volumes of Bentley and Trimmens' *Medical Plants.*

By 1908 the Botanical Library had been merged with the general collection, and only those botanical texts that were used daily were left in the Department.

Little is known about the main library during this period. Through the recollections of long-term employees it has been determined that the first librarian came about 1908, possibly at the time the two libraries were brought together.

A new Science Building was equipped and occupied in 1911, and quarters were provided for the growing library. There were two long study tables, two desks (one with typewriter), some 20 bookcases with glass doors, and several open shelves for pamphlets and papers. At least 50 periodicals were received and placed on the tables for staff members to look over. The librarian now had an assistant. Most of the departmental collections had been brought together by this time, the books classified after a fashion, and a card index started.

An abstract system was inaugurated in 1913. Readers were in the habit of underlining significant passages in journal articles, so the librarian conceived the idea of putting this to use. Using a loose-leaf ledger she wrote the titles and other bibliographical data under arbitrary subject headings chosen by herself. By 1918 this system filled four huge books and finally outgrew its usefulness as none of the succeeding librarians knew how the minds of their predecessors worked. *Chemical Abstracts* and the *Quarterly Cumulative Index Medicus* eventually replaced this laborious method.

A notice in the *Lilly Balance,* January 1921, informed readers that "the librarian will abstract articles when requested to do so, will translate French and German technical articles, and will assist in placing library services at your disposal."

By this time, glass bookcases filled one room of the Science Building and lined the hall of the first floor. The library was handicapped for lack of space and open shelving, but it did have the advantage of a strategic location where users could drop in for a few minutes each day.

The librarian of the decade 1918-1928 possessed a remarkable memory and boasted that she never recorded a book taken from the library. If someone asked for a volume not on the shelves, she sallied forth into the labs and always found it. Her successor decided it was wiser to keep records. These were 3 x 5 cards bearing the name of each borrower and the titles of each book he had in his laboratory or office.

Move to Research Building, 1934

The Science Building was so overcrowded by 1925 that departments began to overflow into adjacent buildings. A new, long-dreamed-of research building was first laid

SPECIAL LIBRARIES ASSOCIATION

News and Notes

July 1966, No. 3

Published quarterly by Special Libraries Association, 31 East 10th Street, New York 10003

Sunny skies and warm breezes prevailed in the Twin Cities during most of the week of May 29-June 3 when more than 1,400 special librarians, exhibitors, speakers, and guests assembled in the Radisson Hotel in Minneapolis for the Association's 57th Annual Convention. Despite the fine summer weather and the lure of the city's parks, gardens, and lakes, Division and Section meetings, luncheons, and social affairs were well attended, often with standing room only. The exhibit area, in which 67 publishers, equipment and furniture manufacturers, suppliers, binders, jobbers, and other organizations displayed their wares in 81 booths, was usually crowded, and on Sunday evening it was positively jammed as attendees strolled around during the opening cocktail reception.

Three general sessions—and many other meetings—had been carefully planned around the theme, "The Special Librarian—Vital Link in Communication." In his keynote address, Dr. Walter W. Heller, former Chairman of the President's Council of Economic Advisors, both amused and enlightened the audience with his remarks about the new economics and the role librarians play in communicating economic information to the experts and to the public. Dr. George Shapiro, Professor of Communication Arts and Sciences at the University of Minnesota, vividly demonstrated that "the normal result when two humans try to communicate is confusion and misunderstanding." Five Circles of Communication discussed problems and means of communicating with library patrons, management, indexes, machines, and SLA Headquarters.

Division events ranged from business meetings to sessions of contributed papers to open houses. The Business and Finance Division celebrated its Fiftieth Anniversary with a huge birthday cake, Aerospace learned of ways of extending services to users, Geography and Map held a workshop on historical cartography, Metals/Materials met with the Twin Cities Chapter of the Society of Technical Writers and Publishers to consider "Current Trends in Technical Communications," Documentation held two day-long workshops, Petroleum librarians heard a panel discuss systems analysis, Public Utilities sponsored a session on Project CRUSH, and Nuclear Science and Chemistry listened to Dr. F. Joachim Weyle describe the work of the National Research Council's Committee on Scientific and Technical Communications. Publishing's annual Book and Author event featured Walter N. Trenerry, who, with Howard Haycraft, delighted the audience with tales of Minnesota murders and trials. Museum and Picture toured museums, and Social Science enjoyed a five-hour bus trip through the urban renewal projects and recreation areas of the Twin Cities. Other groups visited Green Giant Company, General Mills, Inc., Archer Daniels Midland Company Research Center, 3M Company, and Pillsbury Consumer Service Kitchens.

The Consultation Service, Professional Standards, Recruitment, and *Special Libraries* Committees all held open meetings. The Soviet Exchange Group described their recent visit to libraries and information centers in the Soviet Union, and the Government Information Services Committee invited William T. Knox to discuss COSATI's plans for a national network of information systems. The Audio-Visual Committee arranged two showings of films and slides.

The Scholarship Fund event, sponsored by the Metals/Materials Division, was held at the Guthrie Theatre, where Shakespeare's "As You Like It" was performed in a Civil War ante bellum setting, which aroused much pro and con reaction.

The Annual Banquet featured a smorgasbord, music by the Golden Strings, and entertainment by the Montivideo Barbershop Quartet. Melvin Kirkpatrick was a genial

toastmaster, and President Alleen Thompson presided with her usual warmth, presenting commemorative scrolls and medallions to the three new Hall of Famers: Mary Louise Alexander, Mrs. Elizabeth W. Owens, and Howard L. Stebbins. Robert W. Gibson, Jr. announced that the libraries of Waddell & Reed, Kansas City, and 3M Company, St. Paul, had won National Library Week Publicity Awards, and on behalf of the General Motors Corporation, presented checks to the Heart of America and Minneapolis Chapters of which the winners are members, while the librarians received citation scrolls. The Oklahoma Chapter, which increased its membership by 41.7 percentage points, won the Membership Gavel Award. Howard Haycraft presented the H. W. Wilson Company Chapter Award to Mrs. Nancy Wright, President of the winning Pittsburgh Chapter, which carried out the most effective program on the special librarian as a communicator.

Charles Stevens, Chairman of the Science-Technology Division, presented the Division's Publication Award to Winifred Sewell and Mrs. Mildred P. Clark for their initiative in conceiving, organizing, and editing *Unlisted Drugs* for 17 years. David Rhydwen, Chief Librarian of the Toronto (Canada) *Globe and Mail,* received the second Jack K. Burness Award.

Jackson B. Cohen, Chairman of the Scholarship and Student Loan Fund Committee, announced that five $1,500 scholarships for graduate study at accredited library schools during 1966-67 had been awarded to: Susan O. Barrick, Richmond, Virginia; Janet K. Boles, Randlett, Oklahoma; Renee C. Evans, Los Angeles; Mrs. Pamela S. Palm, Franklin Park, Illinois; and Charles E. Snell, Albuquerque, New Mexico.

Herbert S. White presided at the evening meeting of the Advisory Council, of which he was Chairman. After Mrs. Helen Redman reviewed the past actions of the Council and Board, Bill M. Woods gave his Executive Director's report. Dr. Frank L. Schick commented on the statistical activities of the U. S. Office of Education. Several kinds of Convention awards were suggested and discussed, but no recommendations were made. Eugene P. Kennedy summarized the opportunities for library research and training under Title II-B of the Higher Education Act of 1965 and progress made to date by the Bureau of Research of the Office of Education. The Association's recruitment activities and the plans of the Recruitment Committee were reviewed by the Chairman, Mrs. Mary Lee Tsuffis, and Mrs. Redman reported for the Project Review Committee, which recommended that henceforth it be the Advisory Council Agenda Committee. Dr. Karl Baer announced that the Special Libraries Section of IFLA has published the first issue of its newsletter, *Inspel.*

At the Annual Meeting, held on the morning of June 1, President Alleen Thompson, presiding, reviewed the Association's activities during the past year. Treasurer Jean Flegal reported on the sound financial condition, and ten committee chairmen whose groups have been particularly busy summarized their accomplishments and future plans. There was some discussion of ways and means of increasing Sustaining membership. Virginia Bersagel, Chairman of the Insurance Division, presented a check for $1,000 to the Scholarship and Student Loan Fund on behalf of her colleagues. New officers for 1966-67 were introduced: Mrs. Elizabeth R. Usher, President-Elect; Charles H. Stevens, Chairman-Elect, Advisory Council; and Mrs. Theodora A. Andrews, Charlotte Georgi, and Gordon E. Randall, Directors. (At its June 3 meeting, the Board elected Mrs. Andrews Secretary.) The meeting concluded with a spirited address on "Expectations of Excellence" by the new President, Dr. F. E. McKenna.

Two post-Convention events took place on June 3. The Education Committee, Erik Bromberg, Chairman, sponsored its Second Forum on Education for Special Librarianship, which was well attended by library school deans and faculty members. Two panels considered aspects of "Continuing Education for Special Librarianship" and "The Course Content of the Special Library Course." Information problems and services from the research and library points of view were explored by the Natural Resources Librarians Roundtable.

The former Engineering, Nuclear Science, and Petroleum Sections of the Science-Technology Division petitioned for and received approval to be Divisions. The Pharmaceutical Section since has petitioned for Division status.

The Aerospace Division voted to transfer the title of its bi-monthly publication,

Proceedings in Print, to Barbara Spence and Malcolm Ferguson of the editorial staff.

A grant of $80,530 has been received from the National Science Foundation for compiling and publishing a cumulative index of scientific, engineering, and technical articles, patents, monographs, and symposia proceedings that have been translated from foreign languages into English by private, commercial, and government organizations. It is estimated that the one-year project will produce an index of 126,600 translations existing as of June 30, 1965. Mechanical data handling and storage techniques will be utilized for compilation. Bill M. Woods will serve as principal investigator, J. Walter Shelton, Assistant Librarian for Technical Services, John Crerar Library, will provide supervisory direction, and the staff of the SLA Translations Center will assist.

The Library Technology Program of ALA has granted funds to underwrite a Joint Survey of Library Automation Activities, which will be undertaken cooperatively by SLA's Documentation Division and LTP. The objective of the study, which is being conducted by Creative Research Services, Inc., of New York City by means of a mail questionnaire, is to determine the extent, future plans, and kinds of automation activities engaged in by technical, research, medical, law, and other special libraries as well as large public and university libraries in the United States and Canada.

During its meetings the Board of Directors established a number of ad hoc committees: Committee on Research, Gordon E. Randall, Chairman; Committee to Study the Need for Continuing Education Seminars, Charles Stevens, Chairman; Committee to Consider Relationship of Education and Recruitment Committees, Charles Stevens, Chairman; and Committee to Study Position Advertising in *Special Libraries* and the Placement Service, Mrs. Elizabeth R. Usher, Chairman.

The Board approved the recommendation of the Ad Hoc Committee to Investigate Methods and Program for Increasing Association Membership, Mrs. Dorothy Skau, Chairman, that the Chapters undertake a Student membership campaign this fall and next spring by providing speakers and information to library schools and inviting students to visit special libraries. Michigan Chapter will be asked to carry out a pilot project on ways of making a stronger appeal to management to become Sustaining members. An Ad Hoc "Patronizing" Committee, Charlotte Georgi, Chairman, will investigate management practices of making contributions or taking out supporting memberships in professional societies.

The Ad Hoc Committee on Extra-Association Relations, Katharine Kinder, Chairman, presented a policy statement designed to guide individuals and groups when speaking for the Association, to define parameters of outside contact, to clarify Chapter, Division, and Section affiliations, and to consider contractual and fiscal inferences involved in "outside contacts."

Putting Knowledge to Work" will be the theme of the 1967 Convention in New York, while "Special Libraries—Partners in Research for Tomorrow's World" will guide the 1968 Los Angeles Convention. Eleanor Magee will be Chairman of the 1969 Convention in Montreal.

The Board agreed to contribute $2,000 to support *Documentation Abstracts* as a publishing partner with ADI and the Chemical Literature Section of ACS.

William S. Budington is SLA's representative to the Ad Hoc Joint Committee on National Library-Information Systems (CONLIS), which is working on a program to develop better access to resources in libraries and information centers.

The Board approved the recommendations of the Nonserial Publications Committee that a ten percent royalty of annual gross income be paid to individual authors who conceive and prepare Association publications by themselves and that a formal contract be made between the Association and individual authors.

Six $1,500 scholarships have been authorized for the 1967-68 academic year.

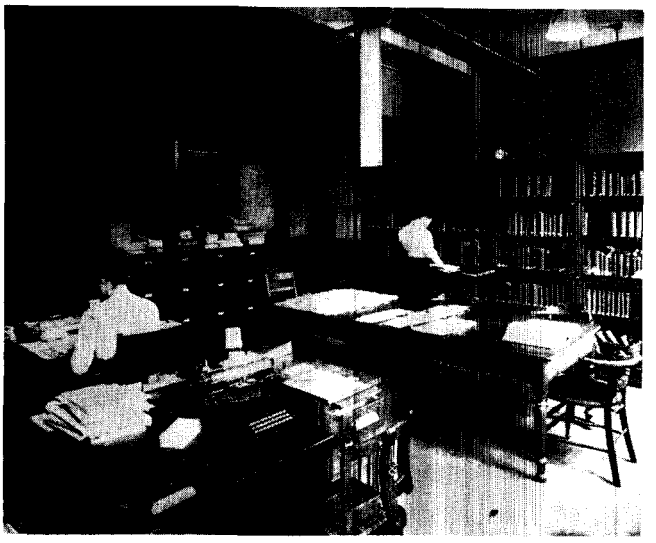
Recommended Practices for the Advertising and Promotion of Books, which were formulated by the ABPC-SLA Joint Committee, were approved by the Board. A new Publisher Relations Committee will be formed to continue working with publishing organizations.

The Fall Meeting of the Board of Directors will be held in New York City, September 26-28; the Board and Advisory Council will hold their Midwinter Meetings at the Shamrock-Hilton, Houston, January 19-21, 1967.

SLA Sustaining Members

The following organizations are supporting the activities of the Special Libraries Association by becoming Sustaining Members for 1966. This list includes all applications processed through June 10, 1966.

ABBOTT LABORATORIES LIBRARY
RICHARD ABEL & COMPANY, INCORPORATED
AEROSPACE CORPORATION
AETNA STEEL PRODUCTS CORPORATION
AMERICAN CAN COMPANY, Research Center
AMERICAN CANCER SOCIETY, INCORPORATED
AMERICAN CYANAMID COMPANY
AMERICAN ELECTRIC POWER SERVICE CORPORATION
AMERICAN GAS ASSOCIATION
AMERICAN IRON AND STEEL INSTITUTE
AMERICAN LIBRARY ASSOCIATION
AMERICAN TOBACCO COMPANY
AMPEX CORPORATION
ARGONNE NATIONAL LABORATORY
ATLAS CHEMICAL INDUSTRIES, INCORPORATED
BANK OF AMERICA
BASIC ECONOMIC APPRAISALS, INCORPORATED
BELL AND HOWELL RESEARCH CENTER
BELL TELEPHONE LABORATORIES
BETHLEHEM STEEL COMPANY
BOEING COMPANY
BOSTROM CORPORATION
R. R. BOWKER COMPANY
BRIDGEPORT PUBLIC LIBRARY
BRO-DART INDUSTRIES, INC.
CARRIER CORPORATION
CHEMCELL LIMITED
CHICAGO MEDICAL SCHOOL LIBRARY
CHIVERS BOOKBINDING COMPANY
CIBA PHARMACEUTICAL COMPANY
COLLEGE OF PETROLEUM AND MINERALS, Saudi Arabia
COLORADO STATE UNIVERSITY LIBRARIES
CONSOLIDATED EDISON COMPANY OF NEW YORK
CONSOLIDATION COAL COMPANY
CONTINENTAL CARBON COMPANY
CONTINENTAL NATIONAL AMERICAN GROUP
CORNELL UNIVERSITY LIBRARY
CORNING GLASS WORKS
JOHN CRERAR LIBRARY
DALHOUSIE UNIVERSITY
DALLAS PUBLIC LIBRARY
DEFENSE DOCUMENTATION CENTER
DOW CHEMICAL COMPANY, Golden, Colorado
DOW CHEMICAL LIBRARY, Midland, Michigan
E. I. DU PONT DE NEMOURS AND COMPANY, Lavoisier Library
E. I. DU PONT DE NEMOURS AND COMPANY, Technical Library
EAST ORANGE FREE PUBLIC LIBRARY
EASTMAN KODAK COMPANY
ESSO RESEARCH AND ENGINEERING COMPANY
F. W. FAXON COMPANY, INCORPORATED
FEDERAL RESERVE BANK OF NEW YORK
FIRST NATIONAL BANK OF BOSTON
FIRST NATIONAL BANK OF CHICAGO
FORD FOUNDATION
FORD MOTOR COMPANY
GENERAL DRAFTING COMPANY, INC.
GENERAL ELECTRIC COMPANY
GENERAL FOODS CORPORATION
GENERAL MILLS, INC.
GENERAL MOTORS CORPORATION, Public Relations Library
GENERAL MOTORS CORPORATION, Research Laboratories
GENERAL RADIO COMPANY
GLICK BOOKBINDING CORPORATION
B. F. GOODRICH RESEARCH CENTER
HARVARD GRADUATE SCHOOL OF BUSINESS ADMINISTRATION
MILTON S. HERSHEY MEDICAL CENTER LIBRARY
HONEYWELL, INCORPORATED
HUGHES AIRCRAFT COMPANY
IDAHO STATE UNIVERSITY LIBRARY
INDIANA STATE LIBRARY
INTERNATIONAL BUSINESS MACHINES CORPORATION
JOHNS-MANVILLE RESEARCH AND ENGINEERING CENTER
WALTER J. JOHNSON, INCORPORATED
KAISER ALUMINUM AND CHEMICAL CORPORATION
ELI LILLY AND COMPANY
LITTON SYSTEMS (CANADA) LIMITED
LOCKHEED MISSILES AND SPACE COMPANY
LOS ANGELES COUNTY MUSEUM OF ART
A. C. MCCLURG AND COMPANY
MCGRAW-HILL, INCORPORATED
MCKINSEY & COMPANY, INC.
MARATHON OIL COMPANY
MARQUETTE UNIVERSITY MEMORIAL LIBRARY
MAXWELL SCIENTIFIC INTERNATIONAL, INCORPORATED
MELLON NATIONAL BANK AND TRUST COMPANY
MINNESOTA MINING AND MANUFACTURING COMPANY
MISSOURI STATE LIBRARY
NATIONAL ASSOCIATION OF ENGINE AND BOAT MANUFACTURERS
NATIONAL BANK OF DETROIT
NATIONAL CASH REGISTER COMPANY
NATIONAL LEAD COMPANY
NATIONAL LIBRARY, Singapore
NATIONAL LIBRARY OF MEDICINE
NATIONAL LIBRARY OF NIGERIA
NEW YORK LIFE INSURANCE COMPANY
NEW YORK PUBLIC LIBRARY
NEW YORK TIMES
NEW YORK UNIVERSITY LIBRARIES
NORTH AMERICAN AVIATION, INCORPORATED
OHIO STATE LIBRARY
PENNSYLVANIA STATE UNIVERSITY
PEOPLES GAS LIGHT & COKE COMPANY
PERGAMON PRESS, INCORPORATED
PITTSBURGH PLATE GLASS COMPANY, Barberton, Ohio
PITTSBURGH PLATE GLASS COMPANY, New Martinsville, West Virginia
PORT OF NEW YORK AUTHORITY
C. W. POST COLLEGE
PRENTICE-HALL, INCORPORATED
PROCTER AND GAMBLE COMPANY
QUEENS BOROUGH PUBLIC LIBRARY
RCA LABORATORIES
RADIATION, INCORPORATED
RAND CORPORATION
ROCKEFELLER OFFICE LIBRARY
ROCKFORD PUBLIC LIBRARY
ROHM & HAAS COMPANY
ROYAL BANK OF CANADA
ST. JOHN'S UNIVERSITY LIBRARY
SHAWINIGAN CHEMICALS LIMITED
SHELL DEVELOPMENT COMPANY
SHELL OIL COMPANY
SKOKIE PUBLIC LIBRARY
SPACE TECHNOLOGY LABORATORIES, INCORPORATED
SQUIBB INSTITUTE FOR MEDICAL RESEARCH
J. W. STACEY, INCORPORATED
STANDARD OIL COMPANY (NEW JERSEY)
STANDARD OIL COMPANY OF CALIFORNIA LIBRARY
STECHERT-HAFNER, INCORPORATED
STERLING-WINTHROP RESEARCH INSTITUTE
SUN OIL COMPANY
SYNTEX CORPORATION
SYSTEM DEVELOPMENT CORPORATION
TAYLOR CARLISLE'S BOOK STORE, INC.
TECHNICAL BOOK COMPANY
TEXAS GAS TRANSMISSION CORPORATION LIBRARY
J. WALTER THOMPSON COMPANY
TIME, INC.
TRW SYSTEMS
UNION ELECTRIC COMPANY
UNITED COMMUNITY FUNDS & COUNCILS OF AMERICA, INCORPORATED
UNITED STATES AIR FORCE ACADEMY
UNITED STATES STEEL CORPORATION
UNIVERSAL OIL PRODUCTS COMPANY
UNIVERSITY OF ARIZONA LIBRARY
UNIVERSITY OF DENVER
UNIVERSITY OF HAWAII
UNIVERSITY OF MINNESOTA LIBRARY
UNIVERSITY OF MISSOURI AT KANSAS CITY
UNIVERSITY OF NEW MEXICO
UNIVERSITY OF OKLAHOMA LIBRARY
UNIVERSITY OF TEXAS
UNIVERSITY OF WASHINGTON LIBRARY
UPJOHN COMPANY
WILLIAM JOHN UPJOHN ASSOCIATES
WAYNE STATE UNIVERSITY
WESTPORT PUBLIC LIBRARY
H. W. WILSON COMPANY
WORCESTER FREE PUBLIC LIBRARY
WYETH LABORATORIES, INCORPORATED
XEROX CORPORATION
YUMA PROVING GROUND



The Lilly library occupied this room in the Science Building from 1911 until 1934.

out on the drawing board in 1930. Plans were revised from time to time as new features developed, and excavation was started in July 1933. The building was formally dedicated on October 11, 1934, with all departments in place and in operation. This included the library on the third floor.

The library had been carefully planned with no expense spared. The reading room, or lounge, was 50 feet long, 18 feet wide, and 14 feet high. The entire room was panelled to the ceiling in antique-finish, comb-grain oak, and the arched ceiling was constructed of cast plaster. A fireplace of simple design at one end of the room was flanked by wing-backed chairs. Other comfortable chairs, tables, rugs, and draperies completed the room. At the south end of the reading room a doorway led into the periodical room panelled in similar style. Built into the inner walls were files for current periodicals, holding approximately six months' publication of each journal. About 300 domestic and foreign scientific journals were filed in this room. Beyond the periodical room was the stack room equipped with bookstacks of the latest open type and extending 14 feet from floor to ceiling with a mezzanine floor of ample aisle space at the seven-foot level. Eight thousand volumes of bound journals and books on chemistry, medicine, biology, pharmacology, pharmacy, and botany were available for research personnel. There was room for 15,000 volumes. At the extreme south end of the stack room a door opened into a group of three private study rooms.

A new librarian, the eighth in a 25-year period, was placed in charge of the new library. Mrs. Irene M. Strieby did not arrive early enough to assist in moving the books from the old Science Building to the new location, but she appeared on the scene in time to produce a book from the stacks upon the request of a visiting scientist who attended the dedication ceremonies.

Under Mrs. Strieby's administration library service was extended and the facilities grew. It was the first pharmaceutical company library invited to become a member of the Medical Library Association.

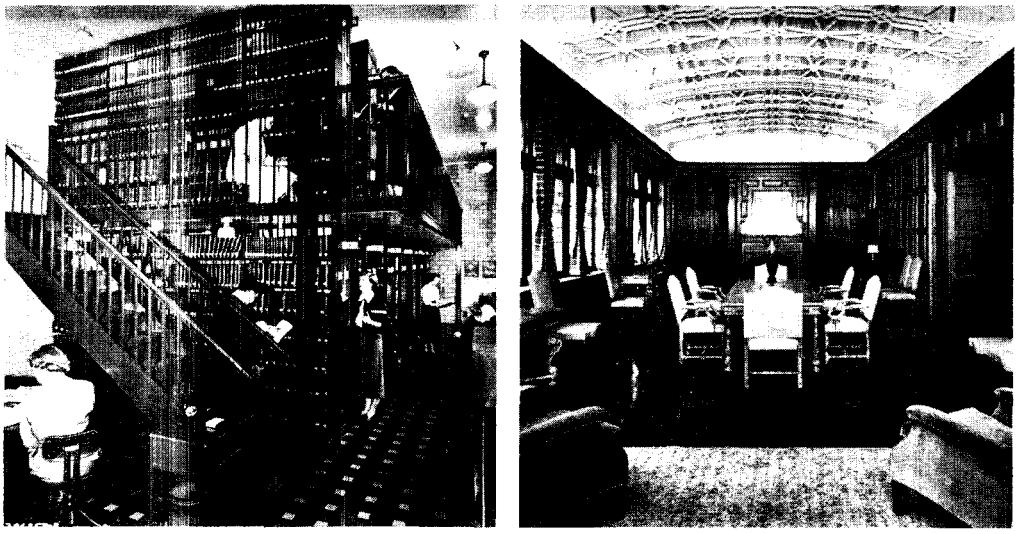
The amount of information necessary to the successful functioning of the company increased immeasurably because of the rapid progress in chemistry and medicine as well as economic and legislative changes. In response to the demand for information in the business field, collections of books devoted to management, marketing, finance, and related data, which were started in 1915, were gathered together in one corner of the library in 1928.

Development of Branches and Services

The increasing demand for this kind of information eventually made it necessary to seek additional space and staff. To obtain more room and place the facilities of the library closer to its users, the business collection was moved to the Administration Building. It was established as the Library Business Service in 1950. Although separated physically from the main library, it remained an integral part. Books were ordered and cataloged centrally, and the same procedures were followed by both operating units.

The operations of the Lilly Library were then divided into three functions: *1)* readers' service, *2)* technical processes, and *3)* business service. Each function was supervised by a librarian with subject specialization, under the direction of the Chief Librarian.

Meanwhile, the Research Library had also outgrown its quarters and, in December 1954, moved from the Research Building to its present location on the third floor of the new Development and Control Building.



Quarters became more elegant and spacious when the library moved to a new Research Building in 1934. On the left is the stack area with its mezzanine floor; on the right is the panelled 14-foot high reading room.

At that time the scientific and business sections of the Lilly Library contained more than 29,000 books, bound periodicals, and microfilms; over 3,000 unbound publications; and reams of pamphlets, catalogs, documents, clippings, and photographs. In addition there were departmental collections at the Lilly Clinic at the Indianapolis General Hospital, the Antibiotics Division at the Kentucky Avenue Plant, the Greenfield Biological Laboratories, the Tippecanoe Laboratories at Lafayette, Indiana, and an embryonic library in the new Agricultural Chemicals Division. There were also the company archives.

To devote full-time to the organization of the company archives, Mrs. Strieby, three years before her retirement, handed over the responsibilities of the library to Louise Lage in 1956. She also continued in the capacity of library consultant.

Another era for the Lilly Library opened June 16, 1959. On this day guests from 24 states, Canada, and Yugoslavia attended the dedication ceremonies of the new Agricultural Research Center at Greenfield, Indiana. For a year prior to the opening of the new center, library personnel, with the assistance of agricultural personnel, had been organizing a collection of books, periodicals, and miscellaneous materials into an agricultural library to be housed in one of the new buildings at Greenfield. The books from the main library that fell into this category were removed and added to the collection. The classification system was expanded and improved, and Mrs. Bernas Sharp Downing was placed in charge.

The growth of Eli Lilly and Company in many varied directions has been reflected in the continued growth of its library. And just as significant is the change of emphasis in subject material—the shift from botanical drugs like Jambul seeds for diabetes and Yerbazin, "a perfect mask for the bitter taste of quinine," to the synthetic organic chemical products such as the sulfa drugs, antibiotics, and others.

The library operation was divided into two separate supervisory units in July 1962. The section formerly called the Library Business Service, under the supervision of Helen Loftus, was established as a separate unit and renamed the Business Library. It was removed from the Research, Development and Control Component and is now aligned with the business arm of the company, reporting directly to the Market Research Division. At the same time, the Research Library became known as the Lilly Scientific Library. Louise Lage, who succeeded Mrs. Strieby, continues as Chief Librarian. Jewell Maurice heads Technical Processes, and Dorcas Bush is in charge of Readers' Service.

The combined staffs of these two libraries and the Agricultural Library Service now total 20. Holdings have increased, services have been added as needs developed, and even the wonder child of the 20th century, automation, is being brought into use.

An annotated bibliography in three sections: *1)* general cooperation; *2)* specific examples of regional cooperation, and *3)* significant single sources. The first two are further divided into types of activity and specific examples. Entries are arranged alphabetically by author within each grouping.

Bibliography of Library Cooperation

DAVID K. CARRINGTON

THE SCOPE OF THIS bibliography is limited to material that discusses, analyzes, and appraises the present state of library cooperation as it exists between special, technical, college and university, and public libraries. It does not include references to international cooperation.

The bibliography spans a period of about five years from 1960 to the fall of 1965. A few sources, notably outstanding monographs and special research projects, are somewhat older. In compiling the bibliography the last five years of *Library Literature* were searched; all the pertinent material cited was scanned.

About 20 subject headings selected for searching included such varied topics as cooperative acquisitions, cataloging, technical processes, cooperative bibliographic centers, information centers, and examples of regional cooperation such as the Center for Research Libraries, the Pacific Northwest Bibliographic Center, and the Southwest Missouri Library Service, Inc.

General Cooperation

ACQUISITIONS

1. BACH, Harry. The Collection and Preservation of Local Resources—A Plea. *Library Resources and Technical Services,* vol. 5, Summer 1961, p. 240-2.

Discusses the ALA-sponsored proposal that state and regional libraries undertake the responsibility of acquiring and preserving locally issued and distributed materials having research value using the principles of the Farmington Plan and the collecting policy of the Midwest Inter-Library Center (now Center for Research Libraries).

2. GALLOWAY, R. Dean. Cooperative Acquisitions for California's Libraries. *California Librarian,* vol. 24, July 1963, p. 183-7.

Indicates that there are two facets to the problem of cooperative acquisitions: *1)* to avoid unnecessary duplication and *2)* to acquire, process, and store materials. Mentions vertical comprehensive collecting (by subject) as the best means for solving acquisition problems in research libraries. The aspect of cooperative acquisitions that seems to have the greatest possibility of success at the present time is that of cooperation to avoid unnecessary duplication. Outlines four steps of a master plan of cooperative acquisitions (improving bibliographic control, assigning responsibilities for acquisition, agreeing to share materials, and planning cooperative acquisition projects).

Mr. Carrington has just received his M.S. from the Library School of Florida State University. While doing his graduate work he undertook, at the request of the Socony Mobil Field Research Laboratory in Dallas, Texas, a literature search of cooperative library efforts and compiled this bibliography under the supervision of Mrs. Martha Jane K. Zachert.

3. KASER, David E. Interdependence of Academic Libraries. *Kentucky Library Association Bulletin,* vol. 25, April 1961, p. 3-9.

Opens with a discussion of the areas of interlibrary cooperation and the responsibilities each member has to the other. Describes the acquisition program existing among the St. Louis Public, St. Louis University, Washington University libraries.

4. MACEACHERN, John. Cooperation Between the Libraries of Washington State University and the University of Idaho. *Pacific Northwest Library Association Quarterly,* vol. 26, January 1962, p. 90-7.

Because of the geographic proximity of these two schools, some form of cooperation was inevitable. The cooperative effort began in 1948. Types of cooperation existing today are newspaper exchange to complete files, reciprocal library use by students and staff of both institutions, various acquisitional projects, and the major program, a Union List of Serials on IBM cards. Concludes by listing other areas of possible cooperation (technical services, binding storage, direct communication networks).

5. MARTIN, Gene. Interlibrary Cooperation in Missouri. *Wilson Library Bulletin,* vol. 40, October 1965, p. 166-71.

There are 14 regional systems operating in Missouri. Discusses the state library program in light of the new federal monies available for library services, outlining six major areas for library projects. Points out that Missouri is committed to the concept of library systems.

6. MEYERHOFF, Erich. The Medical Library Center of New York: an Experiment in Cooperative Acquisition and Storage of Medical Library Materials. *Medical Libraries Association Bulletin,* vol. 51, October 1963, p. 501-6.

On November 20, 1959, the Medical Library Center of New York was incorporated with nine medical libraries as participating members. Outlines in detail the six basic programs of cooperation (joint housing facilities, cooperative central acquisitions, information service, disseminations, a union catalog, program of cooperative research efforts). Financing of projects will come from rental income.

7. MOON, Eric. The Medical Library Center of New York. *Library Journal,* vol. 90, July 1965, p. 2952-7.

Essentially an interview with Erich Meyerhoff, Director of the Center. Discussed are all the activities of the Center, the responsibilities of each of three classes of members (sponsoring, participating, commercial firms), financial support, and some of the methods used by the Center in fulfilling its objectives.

INFORMATION CENTERS

8. STEARNS, John F. National Referral Center for Science and Technology. *College and Research Libraries,* vol. 25, May 1964, p. 205-8.

The Center was established at the Library of Congress with support of the National Science Foundation and was given three basic missions: to determine all significant sources of information resources in the sciences, to insure full utilization of these resources by "referring inquiries," and to examine the inter-relationships within the nation's scientific and technical information network. Tells how the Center performs these tasks and is developing a publications program.

9. ———. National Referral Center's First Year. *Special Libraries,* vol. 55, January 1964, p. 20-3.

Indicates, statistically, the progress made in each of the Center's areas of activity and analyzes the inquiries received as to origin and subject area. Also indicated, by percentage, the satisfaction and dissatisfaction of those using the Center's services.

CENTRALIZED CATALOGING

10. ELLSWORTH, Ralph E. Another Chance for Centralized Cataloging. *Library Journal,* vol. 89, September 1, 1964, p. 3104-7.

The Association of Research Libraries proposes the establishment of a National Cataloging Center in Washington, D. C. Initial task would be to catalog books from countries with less common languages. Indicates that the cost of service borne by the participating libraries would not increase their total costs. The author sees the ARL project as one way to avoid a cataloging crisis among libraries in the near future.

11. HOPKINSON, Shirley L. Centralized Cataloging and Indexing Services. *Library Journal,* vol. 86, February 15, 1961, p. 747-9.

Essentially about current trends in centralized services. One identifiable trend is toward simplified descriptive cataloging. One area of experimentation mentioned is machine reproduction of catalog cards. Another trend is the return to the book catalog. Mentions the growth of commercial cataloging and processing services as a significant innovation for single library units and small school districts. Cites two examples of cooperation between libraries: the California State Library's Processing Center, which provides 16 county and city libraries with cataloged books, and the North Bay Cooperative Center, which serves 14 libraries.

12. PIERSON, Robert M. Centralized Cataloging; Its Implication to Personnel. *Library Journal,* vol. 90, February 15, 1965, p. 826-8.

Investigates the effects centralized cataloging has on personnel, indicating some of the advantages and disadvantages inherent in such a change. One obvious advantage is freeing trained personnel to devote more time to other professional tasks.

13. WIESE, M. Bernice. Shortening Process; Centralized Cataloging and Processing Saves Time and Money. *Southeastern Librarian,* vol. 11, Fall 1961, p. 232-41.

Discusses the steps leading to the creation of the Central Cataloging Section of the School Library Department of Baltimore. Examines the requirements of quarters, equipment, staff, time, and cost and concludes with a description of the services and makes some general suggestions for others thinking of centralizing cataloging needs.

COOPERATIVE CATALOGING

14. BREGZIS, Ritvars. Some Prerequisites to Cooperative Cataloging. *College and Research Libraries,* vol. 25, November 1964, p. 497-500.

A philosophical discussion of the problems and difficulties inherent in cooperative or centralized cataloging. Suggests that before administrations begin work on technical aspects of cooperative cataloging, they should concern themselves with a basic re-evaluation of the conventional philosophy of bibliographic organization.

15. POPECKI, Joseph T. Bibliographic Information Exchange. *Library Journal,* vol. 90, February 15, 1965, p. 823-6.

Claims that while there are inherent advantages in centralization and mass production, extremes can rob the library of its individuality and ignore its specific needs. Indicates that availability of prompt, accurate, and inexpensive bibliographic information is the answer. Examples are cited that point up the need of individuality in cataloging. The author advocates a system of bibliographic information exchange.

16. WILLIAMS, Gordon R. Library Cooperation—Key to Greater Resources. *Special Libraries,* vol. 56, October 1965, p. 565-70.

Points out the obvious and not so obvious advantages in cooperative library programs, especially for cataloging and storage. "Cooperation is indeed the key to library resources."

COOPERATION—COLLEGE AND UNIVERSITY LIBRARIES

17. CULBERTSON, Kay. Public and College Libraries—Cooperative Services. *Kentucky Library Association Bulletin,* vol. 26, July 1962, p. 12-18.

Discusses the various types of cooperation existing between public and college libraries (exchange of information about holdings and acquisitions, exchange of catalog cards, union list of serials, microtext publishing projects, local agreements for selective acquisitions, exchange and disposal of duplicates or unwanted material) citing examples.

18. DOWNS, Robert B. College Library Cooperation in Arkansas. *Illinois Libraries,* vol. 47, March 1965, p. 197-202.

In 1957, seven private colleges in Arkansas formed an organization known as Arkansas Foundation of Associated Colleges and requested money from the Rockefeller Brothers Fund to initiate joint acquisition of materials. The request was granted, and each college received the same amount of money to build up its collection in a designated field. This was implemented through interlibrary loan, book catalogs, and printed cards in each library for the cooperative purchases. Three criticisms were: some faculty and staff were not fully satisfied with their respective library's assignment for books, over-specialization in this area beyond the needs of a four-year college, and disagreement over equal dispersement of money. These libraries now are moving toward the acquisition of periodicals in a similar manner, exchange of personnel to understand the resources and services of the other libraries, and continuation in a modified form of the cooperative program for book acquisition.

19. ———. Cooperative Program for Kansas City Area Libraries. *Missouri Library Association Quarterly,* vol. 25, June 1964, p. 34-7+.

In 1962 the Kansas City Regional Council for Higher Education was established, encompassing 14 colleges. Discusses the physical background and facilities and then offers the following proposals concerning cooperation: collection development, cooperative storage, bibliographic access, expediting use, centralized processing, finances, and regional library authority. Claims that the best way for the private college to maintain high standards and ideals is to engage in worthwhile cooperation.

20. ———. Library Cooperation in Kansas City. *College and Research Libraries,* vol. 25, September 1964, p. 380-4.

The Kansas City Regional Council for Higher Education examined the holdings and policies of member libraries with a view toward framing recommendations for inter-library cooperation. On the basis of this examination, the Council made proposals on collection development, cooperative storage, bibliographic access, expediting use, centralized processing, finances, and regional library authority.

21. RANDALL, Ferris S. Library Cooperation Among Institutions of Higher Education. *Illinois Libraries,* vol. 43, November 1961, p. 631-8.

Discusses chiefly the generalities of library cooperation. Claims public libraries engage in more forms of cooperation than academic libraries, but main emphasis is on cooperation among academic libraries. His investigation revealed roughly five categories: professional conferring, interlibrary loan, special catalogs and union catalogs, preservation of local materials, and cooperative storage activity (specifically Mid-West Inter-Library Center). A view of cooperation as it exists in Illinois.

22. SPARKS, C. Glenn. Academic Institutions in North Texas Organize for Cooperation. *Texas Library Journal,* vol. 41, Spring 1965, p. 6-8.

Outlines the cooperative accomplishment of the five corporate members of the Inter-University Council of the Dallas and Fort Worth Metropolitan Areas (IUC). Primary cooperative efforts are union lists, private-line teletypewriters for bibliographic information, and borrowing privileges.

COOPERATION—SPECIAL LIBRARIES

23. Associated Science Libraries of San Diego. *Special Libraries,* vol. 54, December 1963, p. 653-4.

A news note on the seven scientific and technical libraries that formed the Associated Science Libraries of San Diego. The group's objectives are to give greater library service, save money by avoiding duplications, and provide easy access to specialized collections in the area.

24. MILLER, Ted. Six Minneapolis Insiders Build Unique Cooperative. *Special Libraries,* vol. 54, May 1963, p. 295-7.

The $50 million Northstar Center houses six company libraries covering the fields of advertising, finance, public utilities, paper, banking, and food. The librarians, realizing the mutual advantages, formed a cooperative called the Minneapolis "Insiders." One example of cooperative effort is periodicals acquisition. Each library shares equally in the benefits, and closer contact gives librarians greater interest in their profession.

REFERENCE SERVICES—REGIONAL CENTERS

25. GARRISON, Guy. What Ohio Can Do! Some Patterns for Regional Reference Service. *Ohio Library Association Bulletin,* vol. 35, April 1965, p. 6-10.

Mentions some of the outstanding examples of reference cooperation, but concentrates on the Wisconsin system.

26. HAAS, Warren J. Statewide and Regional Reference Service. *Library Trends,* vol. 12, January 1964, p. 405-12.

Purpose is to identify and describe the several kinds of library systems that provide reference services to supplement those offered by the individual components of the systems. Mentions the systems offering comprehensive services, such as the New York Regional Reference and Research Library and the Pennsylvania Plan. Next discussed are the systems established to provide reference service only, such as the Wausau Regional Reference System, the Denver-Tri-County Reference Service Project (JADA), and the San Joaquin Valley Information Service. References at end.

27. HUSTON, Dorothy. Reference Systems—A Review of the Literature. *Wisconsin Library Bulletin,* vol. 57, May 1961, p. 138-44+.

Discusses the what, why and where of reference systems and describes seven examples of true regional reference systems (Macomb County, Michigan, San Joaquin Valley Reference Demonstration, Denver-Tri-County, Enoch Pratt Free Library, Nassau Library System of New York, Reference and Research Library Resources in New York, and Wisconsin). Concludes with bibliography.

28. SABSAY, David. The North Bay Cooperative Library System. *News Notes of California Libraries,* vol. 58, Summer 1963, p. 335-47.

Outlines the objectives, functions, and scope of the North Bay Cooperative Library System in California. Describes in detail every aspect of the cooperative, including the closed circuit teletype linking the ten larger members.

29. SIEDSCHLAW, Betty. Cooperative Program—the Huron Regional Library Center. *South Dakota Library Bulletin,* vol. 51, January 1965, p. 6-7.

The Regional Coordinator outlines the basic objectives, activities and goals of this new program of regional cooperation.

30. Three Examples of Approaches to the Provision of Regional Reference Services. *Library Journal,* vol. 89, April 15, 1964, p. 1676-87.

A series of three articles dealing with cooperative reference services in New York, Wisconsin, and California. In sum, story of a resourceful demonstration of cooperative regional reference.

TECHNICAL SERVICES—CENTRALIZED

31. DRENNAN, Henry T. Centralized Technical Services in Idaho. *Pacific Northwest Library Association Quarterly,* vol. 26, April 1962, p. 150-8.

Deals with Centralized Technical Services for small public libraries in Idaho. Points out the advantages plus two major disadvantages (i.e. retrospective cataloging and the feeling of librarians in smaller libraries that their major task is taken away). Explains that the Service is responsible for acquisition, classification, cataloging, processing, and delivery of library materials to member libraries and outlines the entire operation. Some remarks on the problems of CTS and future plans. A good article for an overview of centralized technical processing in a region.

32. ECKFORD, Mary L. The Library Service Center of Eastern Ohio: An Experiment in Centralized Processing. *Library Resources and Technical Services,* vol. 5, Winter 1961, p. 5-33.

A long discursive article dealing with the history of the Library Service Center of Eastern Ohio, its ordering procedures, cataloging practices, the correlating of orders and books, preparation of catalog cards, book preparation, efficient planning, and cost (very detailed), ending with a look into the future. Introduction has some pertinent thoughts on cooperation in general.

TECHNICAL SERVICES—COOPERATIVE

33. ADCOCK, Elizabeth. A Comparison of the Operation of Various Processing Centers. *Library Resources and Technical Services,* vol. 8, Winter 1964, p. 63-70.

Uses three different types of processing centers in comparing costs: the state operated center (North Carolina State Library Processing Center), the public library operated center (Westchester Library System of New York), and a center operated by an association of libraries formed for just that purpose (Library Service Center of Eastern Ohio). Examines the operation, cost, processes and staffing for each system.

34. HUNT, James R. The Historical Development of Processing Centers in the United States. *Library Resources and Technical Services,* vol. 8, Winter 1964, p. 54-62.

Deals with the history of central processing in the U. S., excluding library systems. Points out that the Library Services Act of 1956 enabled many libraries to implement long-standing plans of cooperative technical processing. At the time of writing there were over 30 centers involving 500 libraries. Mr. Hunt estimates the number has since doubled. Processing center patterns vary depending on local conditions and needs. A table of regional processing centers is attached, which lists over 45 separate centers giving the date of establishment, member libraries, basis of participation, book ordering, and card reproduction.

35. Texas State Library Will Begin Centralized Processing Center as Pilot Under LSCA. *Library Journal,* vol. 90, May 1, 1965, p. 2113.

On July 1, 1965 as a pilot project under Library Services and Construction Act, Texas State Library began operating a Centralized Processing Center utilizing, for the first time, automatic data processing to print purchase orders and shipping invoices and to maintain all budgetary accounting.

Specific Examples of Regional Cooperation

REGIONAL STORAGE SYSTEM
(HAMPSHIRE INTER-LIBRARY CENTER)

36. HARRAR, Helen J. Cooperative Storage Warehouses. *College and Research Libraries,* vol. 25, January 1964, p. 37-43.

Discusses the activities, memberships, materials, storage space, and cost of three well-known storage cooperatives—New England Deposit Library, Midwest Inter-library Center, Hampshire Interlibrary Center. Excellent for a thumbnail sketch of each system.

37. METCALF, Keyes D. *The Hampshire Interlibrary Center.* The Center, 1957. 31 p.

Authoritative material on the Hampshire Interlibrary Center. Short, informative book.

REGIONAL ACQUISITION SYSTEM
CENTER FOR RESEARCH LIBRARIES

38. HENKLE, Herman H. Cooperation on a Regional Level: The Center for Research Libraries. *Special Libraries,* vol. 56, October 1965, p. 581-3.

Complements Mr. Williams' excellent article in *Library Journal.* Mentions the abortive teletype system and goes into detail about the "Science

Journals Center," the Center for Research Libraries' program of acquisition of every title abstracted in *Chemical Abstracts and Biological Abstracts.*

39. WILLIAMS, Gordon R. The Center for Research Libraries; its New Organization and Programs. *Library Journal,* vol. 90, July 1965, p. 2947-51.

A brief sketch of the organization's history, commenting on the Center's four original areas of activity. Mention is made of the 1963 survey conducted by McCarthy and Swank, which recommended that CRL should drop its regional emphasis and become a national institution. The new cooperative acquisition program is outlined in detail. Concludes with a discussion of two new projects (cooperative microfilming, development and use of automation).

40. ———. The Programs of the Midwest Interlibrary Center. *California Librarian,* vol. 24, January 1963, p. 29-34.

Briefly traces the Midwest Inter-library Center's history from the survey of Metcalf and Fell in 1938, which recommended a midwestern counterpart to the New England Deposit Library. Quotes storage costs that prove the economic worth of the Center. Mention is made of the Foreign Newspaper Microfilm Project and the Foreign Official Gazette Project, both of which are supported by the Association of Research Libraries.

REGIONAL BIBLIOGRAPHIC CENTER
(PACIFIC NORTHWEST BIBLIOGRAPHIC CENTER)

41. JOHNS, Loeta L. PNBC: Past and Future. *Pacific Northwest Library Association Quarterly,* vol. 28, January 1964, p. 120-3.

Discusses the pros and cons of converting the holdings of the Pacific Northwest Bibliographic Center to a printed book catalog.

42. News from the Bibliographic Center. *Pacific Northwest Library Association Quarterly,* vol. 29, October 1964, p. 70-9.

This is essentially the Annual Report of the Director on the PNBC Council, the Executive Committee, Finance, Union Catalog, National Union Catalog, Interlibrary Loan and Related Services, Checking of Lists, Public Relations and Publicity, plus a complete financial statement and estimated budget for 1964-65.

43. SWANK, Raynard. The Pacific Northwest Bibliographic Center. *In* KROLL, Morton. *Libraries and Librarians of the Pacific Northwest.* Seattle: University of Washington Press, 1960. Chap. 5, p. 220-40.

Examines every aspect of the Center's functions and activities such as interlibrary loan, the Union Catalog, organization, administration, and finance.

44. TAYLOR, Desmond. PNBC: Static or Dynamic? *Pacific Northwest Library Association Quarterly,* vol. 27, July 1963, p. 208-13.

Proposes that PNBC become a model for a demonstration of automation techniques in a bibliographic center by use of the computing equipment housed at the University of Washington, under the stewardship of the School of Librarianship.

REGIONAL REFERENCE SYSTEM
(SAN JOAQUIN VALLEY INFORMATION SERVICE)

45. WYNN, Barbara L. Information Unlimited! The Story of the San Joaquin Valley Information Service. . . . A Successful Reference Demonstration. *News Notes of California Libraries,* vol. 58, Summer 1963, p. 315-34.

A lengthy discussion of the promotional methods used to publicize the Service. Not too much information on details of the project objectives, but rather on how the Service actually works. Written by the former director of the project.

46. ———. Cooperation in California: "Key to Better Reference Service." *RQ,* vol. 3, March 1964, p. 7-8.

A good, brief summary on the San Joaquin Valley Information Service. Indicates some of the questions posed and how answers are prepared.

REGIONAL PROCESSING CENTER
(SOUTHWEST MISSOURI LIBRARY SERVICE, INC.)

47. CARHART, Frances D. *Southwest Missouri Library Service, Inc.: A Study in Cooperative and Centralized Technical Services.* Chicago: ALA, 1962. 78 p.

The definitive work on this cooperative effort. It is fairly long, though well broken down into chapters and sub-chapters.

48. DENNIS, Willard K. Central Processing in Southwest Missouri. *Library Journal,* vol. 84, November 1, 1959, p. 3378-80.

Essentially a report of service performance and cost for the period October 1957-June 1959. Lists the 15 policies adopted by member librarians. Participation has permitted members to increase quantitatively and qualitatively other library services.

49. ———. Southwest Missouri Library Service, Inc. *Missouri Library Association Quarterly,* vol. 18, December 1957, p. 119-23.

Somewhat repetitive of the information in the Lj article (see item 48 above), but considers more the effect on the individual members.

Significant Single Sources

1. *Denver-Tri-County Reference Service Project* (leaflet). Available from Gordon L. Bennett, Deputy State Librarian, Colorado State Library, Department of Education, 320 Capitol Building, Denver 2, Colorado.

2. Cooperative Planning for Public Libraries. *News Notes of California Libraries,* vol. 56, no. 2, pt. 2, Spring 1961, p. 214-86.

3. *Library Trends,* vol. 6, January 1958, "Building Library Resources Through Cooperation."

Eleven articles on cooperation among various types of libraries.

4. *News Notes of California Libraries,* vol. 58, no. 3, Summer 1963.

5. HARRAR, Helen J. Cooperative Storage Warehouses. Thesis (Ph.D.), Rutgers University, 1962. 203 p.

6. *Special Libraries,* vol. 56, no. 8, October 1965, "Library Cooperation."

This is the summary paper in the series of four papers on simulated machine indexing. Simulated machine indexing, based on using a subject index as a simulated computer memory, has shown that an index that would be superior to KWIC indexing in terms of relevance can be prepared by this method. The use of words from titles plus abstracts as input to match a thesaurus has been shown to generate too many irrelevant index terms to be of value. The technique designed to evaluate human indexing, KWIC indexing, and simulated machine indexing has been capable of assigning relative efficiency of both indexing tools and indexing methods.

Simulated Machine Indexing, Part 4:

A Technique to Evaluate the Efficiency of Indexing

MASSE BLOOMFIELD

DURING THE generation of the data for this series, the major goal was to find a machine indexing method equal to human indexing. This goal was not achieved. Yet it was apparent, after using the method of simulated machine indexing as described in the three earlier articles on several different indexing journals, that there might be a method by which the indexing efficiency could be evaluated.

In the process of attempting to develop a sophisticated method of generating machine index terms, it was necessary to find some means to evaluate the results. Therefore relative quantitative methods were designed.

In an attempt to summarize the findings of the previous papers, additional data were deemed necessary, and a third indexing tool, Library of Congress catalog cards, was studied.

Library of Congress Subject Headings

Using Library of Congress subject headings taken from Library of Congress catalog cards, data were prepared from 25 books dealing with technological subjects. A simulated computer thesaurus was developed from the subject headings plus the cross references given in the sixth edition of the Library of Congress *Subject Headings* and its supplements. The data given in Table 1 were found when words in the titles were matched with the simulated machine thesaurus. The method used in obtaining the simulated machine index terms is identical to that used in earlier papers in this series. Thus the data are included in this summary paper rather than being separated into an additional paper.

Library of Congress provides very few index terms to describe the subject content of the books it catalogs. For the 25 books used in the sample studied, an average of only one and a half subject headings were found as shown in Table 1. Despite the fact that a very restricted number of subject headings were used, a large number of *see* and *see also* references were available to provide a large association network for various approaches to the library catalog. In the case of technical book titles, KWIC indexing for the 25 examples showed it to be superior to the simulated machine indexing methods, because many words were rejected when they almost matched words in the subject heading list. For instance one of the titles was *Computer Programmer,* and the subject heading used began with "programming," which meant that the word "programmer" was rejected. Table 2 shows one title that was used to generate the results found in Table 1.

The author, who is Supervisor of the Culver City Library of Hughes Aircraft Company, Culver City, California, has written that he "is indebted to Mrs. Sophia P. White, who taught the course on 'Information Retrieval' at the University of Southern California, for her direction and help. Acknowledgements are also due to Edward R. Moser, a fellow student who provided data; to H. Thayne Johnson, a fellow student and also at that time supervisor of the author at Hughes Aircraft Company, for his helpful advice; and to Emil Schafer, a fellow Hughes employee, for his advice and critical comments."

Table 1: Tabulation of the Average Numerical Values for 25 Examples of Library of Congress Cataloging with Subject Headings

	KWIC Terms	L. C. Subject Headings	Machine Indexing Terms Word by Word	Machine Indexing Terms Word by Word Plus Two-Word Terms	Machine Indexing Edited Terms
Average Number of Access Points	3.0	1.4	2.24	2.32	0.52
Average Number of Access Points Plus References	3.0	10.92	25.88	26.08	7.16
Average Relevancy Factor	13.6 (+1.76)	11.2 (+5.6)	10.16 (+1.2)	10.8 (+1.52)	2.88 (+0.8)
Average Number of Irrelevant Access Points	0.88	0	0.64	0.64	0.12

Comparison of the Indexing Journals

Data found for the examples taken from Library of Congress cataloging were compared to the data found for *Physics Abstracts* and *Chemical Abstracts*. Table 3 provides a comparison of the three indexing tools studied by simulated machine indexing. It shows that the simulated machine indexing method will produce as many index terms as human indexers but the relevance, though generally greater than KWIC indexing, falls below that of the human indexer. An average of 20 percent of the index terms were deemed irrelevant using the simulated machine indexing method, whereas almost 30 percent of the terms generated by the KWIC method were deemed irrelevant.

In an attempt to use the data from Table 3 for quantitative evaluation of human indexing using data found by simulated machine indexing, a formula was developed that showed *Chemical Abstracts* to have the greatest indexing efficiency. This formula is $\frac{a \times b}{c}$ where a = simulated machine indexing access points, b = average algebraic relevancy, and c = KWIC access points. For *Chemical Abstracts* using the data from Table 3, the following numerical values were obtained: $\frac{3.0 \times 3.2}{4.7} = 2.05$

Using this formula for the other two indexing tools, the following results were obtained:

Library of Congress Subject Headings . . 1.15

Physics Abstracts 0.96

Thus, when the simulated machine index access points are divided by the KWIC access points for the same indexing tool, a number representing the filtering action of the indexing thesaurus on title words is obtained. This

Table 2: Index Terms Generated by Various Methods for the Title "Structure of Rings" (Rev. Ed. Providence, R. I.: American Mathematical Society, 1964)

KWIC Terms	L. C. Subject Headings	Machine Indexing Terms Word by Word	Machine Indexing Terms Word by Word Plus Two-Word Terms	Machine Indexing Edited Terms
Rings Structure	Rings (Algebra)	Rings	Rings	Rings
	References: Rings (Algebra) *see also* Ideals (Algebra)	*Deleted:* Of Structure *References:* Rings (Algebra) *see also* Ideals (Algebra)	*Deleted:* Of Of Rings Structure Structure of *References:* Rings (Algebra) *see also* Ideals (Algebra)	*Deleted:* Structure of *References:* Rings (Algebra) *see also* Ideals (Algebra)

ratio tends to standardize the number of access points generated by simulated machine indexing. Multiplying this ratio by the algebraic relevance obtained by the simulated machine indexing method gives some indication of the numerical value of the ability of the tool to generate valid index terms. In this evaluation *Chemical Abstracts* exceeded twice the values obtained for either *Physics Abstracts* or Library of Congress cataloging. This method of evaluation may prove to be an accurate guide to indexing efficiency. *Chemical Abstracts* does have a far greater depth of indexing and thereby provides a greater index vocabulary by which the words in the title were able to make a match.

Another indication of the wealth of vocabulary in *Chemical Abstracts* is the number of access points plus the *see also* references of the journal. In comparing the averages of the three indexing tools for the access points plus *see also* references, *Chemical Abstracts* ranked well above Library of Congress Subject Headings and *Physics Abstracts*.

This comparison again has placed the three indexing tools in the same relative order as when trying to determine indexing efficiency. This ranking points to a lack of cross references in the subject index of *Physics Abstracts*. It seems to index articles much like Library of Congress catalogs books but does not have the large number of cross references available in LC *Subject Headings*. In comparing access points in the index or catalog, *Chemical Abstracts* ranks first, followed by *Physics Abstracts* and Library of Congress Subject Headings; it has almost twice as many access points as either of the other indexing tools.

Comparison of the Indexing Methods

Data in Table 3 also provide a comparison of the three methods of indexing. By averaging the algebraic relevance of the three indexing tools, the following figures were obtained:

Human Indexing 10.0
Simulated Machine Indexing 2.2
KWIC Indexing ..... —1.6
(a minus number)

This averaging of algebraic relevance demonstrates without question the bias used in assigning relevance to human indexing. Human indexing has five times the relevance of its closest machine method. This bias was intentional. The simulated machine indexing method shows an average algebraic relevance much higher than KWIC indexing. In this series of studies, the use of identical numerical values of relevance for both KWIC terms and simulated machine indexing terms was attempted. That simulated machine indexing scored so much higher than KWIC indexing in algebraic relevance averages demonstrates the value of filtering irrelevant index terms by thesaurus matching.

KWIC indexing generates far more irrelevant index terms than either human indexing or simulated machine indexing. In averaging the number of irrelevant index headings, the following figures were found in Table 3:

KWIC Indexing 1.6
Simulated Machine Indexing 0.5
Human Indexing 0

By the design of this study, human indexing could not have any irrelevant terms. This was

Table 3: Summary of Data

	KWIC Indexing			Human Indexing			Simulated Machine Indexi Using Word by Word an Two-Word Matching		
	Physics Abstracts	*Chemical Abstracts*	L. C. Subject Headings	*Physics Abstracts*	*Chemical Abstracts*	L. C. Subject Headings	*Physics Abstracts*	*Chemical Abstracts*	L. C Subj Head
Average Number of Access Points	6.5	4.7	3.0	2.3	3.8	1.4	3.3	3.0	2.
Average Number of Access Points Plus References	6.5	4.7	3.0	4.7	12.6	10.9	6.6	12.2	26.
Average Relevancy Factor	17.1 (−9.7)	20.5 (+2.5)	13.6 (+1.8)	18.4 (+9.2)	30.4 (+15.2)	11.2 (+5.6)	15.7 (+1.9)	15.0 (+3.2)	10. (+1.
Average Number of Irrelevant Access Points	2.8	1.2	0.9	0	0	0	0.5	0.5	0.

an arbitrary rule made at the beginning of the experiment. However, no attempt was made to bias either machine method in the generation of irrelevant headings. Thus, the KWIC method produced three times as many irrelevant headings as the simulated machine indexing method. This again points out the efficiency of the filtering action of the thesaurus in reducing the irrelevant headings.

If the KWIC method produced the greatest number of irrelevant headings, it should also have produced the greatest total number of headings. This was true as the following figures from Table 3 show:

KWIC Indexing	4.7
Simulated Machine Indexing	2.9
Human Indexing	2.5

These figures show that the KWIC method generated about twice as many headings as the other indexing methods. Not only did KWIC score highest in generating access points, but it also scored well when the total positive relevance was compared:

Human Indexing	20.0
KWIC Indexing	17.1
Simulated Machine Indexing	13.8

KWIC indexing compares well to the other indexing methods when total relevance is used; when algebraic relevance is used, KWIC indexing had the lowest average.

Discussion

It should be pointed out that the number of examples used in this study was small. Therefore the results probably will not be exactly reproducible. It is intended at a later date to use a much larger number of items and also to study many more indexes.

Despite the limited number of examples, the results point to a technique for quantizing and evaluating indexing, which will compare indexing tools as well as indexing methods. The simulation method of generating index terms will work for all indexing tools that list periodical titles. It has also been shown to evaluate book cataloging.

The intuitive feelings that indexers and catalogers have about indexing tools have been expressed in this series of papers in numerical terms. Once numerical values can be assigned to indexing tools and indexing methods, it is possible to obtain relative standards for indexing. Additional work is needed before the values given in this study could be accepted as a standard.

A Summary of Findings Using Simulated Machine Indexing

First, it has been shown that it is possible to use a thesaurus as a simulated computer memory to match words from the title and thereby produce index terms and cross references. The index that would be generated using this method has been shown to be equal or superior in relevance to the KWIC method as well as having fewer irrelevant terms.

Second, it has been shown that the use of complete abstracts, in addition to words from the title, will generate far too many irrelevant index terms for this procedure to be useful. To produce adequate indexing terms from titles and abstracts, some drastic means will be necessary to eliminate the irrelevant terms that would be generated. Because this is a more difficult operation than generating a small number of relevant index terms, the use of the words from abstracts for input to a machine system for matching shows little promise.

Third, the attempt to find a machine indexing method superior to the present KWIC method has provided a quantitative means to evaluate the depth of indexing, the relevance of the indexing, and the comprehensiveness of cross references. The method used to define the indexing produced by several methods can also be used to compare indexing tools.

Fourth, this study has shown that KWIC indexing does provide a useful index for technical literature. The KWIC index lacks the references that human indexers provide but still has a high relevance value in relation to human indexing. This means that KWIC indexes produce an index that is both quick and economical.

And lastly, by using the method of evaluation used for simulated machine indexing for *Physics Abstracts, Chemical Abstracts,* and Library of Congress subject headings, it has been shown in a relative fashion with a small number of examples that *Chemical Abstracts* is the most efficient indexing tool of the three tools studied.

The use of CODEN, five-letter codes for the titles of periodicals, for convenience in the machine handling of many references and in the publication of long lists of references, has grown steadily during the past three years. This has necessitated the publication of a new *CODEN for Periodical Titles* index for some 40,000 codes and titles and the issuing of such codes on IBM cards and computer tape for direct input to machine systems. There are now CODEN users in many countries of the world and an increased emphasis on coding periodical titles in all areas of human knowledge. A coding service, which supplies new CODEN on demand, has been operating successfully for some time. Cooperation is offered any who can make use of CODEN.

Current Status of the CODEN Project

L. E. KUENTZEL

CODEN are unique, five-letter codes for the titles of periodical publications. They are generated to make possible very concise references or "zip-references" as aids in the handling of serial references in computer information, or data, storage and retrieval systems and in the publication and communication of large numbers of references. The first four letters bear some mnemonic relation to the title as it appears on the cover of the publication, and the fifth letter indicates which of several four-letter grids the code belongs in. For example, the CODEN for *Special Libraries* is SPLB-A, and a reference to page 392 of a current issue would be zip-referenced as SPLB-A-57-392-66, where the 57 is volume and the 66 represents the year of publication. In the computer handling of such a reference, the dashes may be eliminated, provided appropriate zones are allotted for the volume, page, and year digits.

There must be no duplication of any sort in the set of codes. Great care is taken to insure the uniqueness of each code, and the elimination of errors through letter transposition or wrong letters may be accomplished via a computer-generated check-character to be described later. Also of importance is a mechanism whereby CODEN for new or uncoded titles may be provided upon demand at any time. Such service has been functioning for several years and is currently supplying nearly 1,000 new codes per month to users of the CODEN in many countries of the world. Codes and titles are also available in IBM cards with monthly updating and will be available in computer tape shortly.

The idea of extremely abbreviated journal titles for use in references is an old one, but it remained for Dr. Charles Bishop to make the first systematic approach to their use with the publication of a paper in *American Documentation* in 1953 (the code reference to the paper is AMDO-A-4-54-53). After creating the name "CODEN" and expanding their number to nearly 4,000, Dr. Bishop suggested that the American Society for Testing and Materials assume the responsibility for the custody and perpetuation of the system since ASTM was then the largest user of the codes. This was done in 1961, and the number of codes has since grown to some 40,000. A directory of CODEN was rushed to press early in 1963, and a supplement a year later brought the total published codes to 25,000. These books are available from ASTM under the titles of *CODEN for Periodical Titles* and *CODEN for Periodical Titles, Supplement 1.*

A new edition of the directory, combining all previously published CODEN with the 15,000 unpublished codes, is in final stages

---

Dr. Kuentzel of the Wyandotte Chemical Corp., Wyandotte, Michigan, has been Vice-Chairman of the Committee E-13 on Absorption Spectroscopy of the American Society for Testing and Materials for several years and in this capacity has been instrumental in developing the CODEN codes for machine-readable abbreviations for periodical titles. The CODEN Project is now the responsibility of the ASTM Special Committee on Numerical Reference Data.

of preparation. This CODEN index will contain an alphabetical-by-title listing of all titles in various word-order arrangements so that the chance of finding a given title upon first search is very good. There will also be the customary alphabetical-by-CODEN listing. Involved are some 150,000 IBM cards to provide about 100,000 separate entries on 1,000 pages of 8½ by 11 inch size.

The preparation of the material for this new CODEN directory, while adding new codes at the same time, has been a sizeable undertaking and would be much farther behind schedule were it not for much outside help. Credit must go to the Pittsburgh Chapter of Special Libraries Association for providing the various word-order arrangements for some 12,000 of the titles and establishing the pattern on which the rest of the work was done. James Wood and Chemical Abstracts Service have been a constant aid in checking for duplication and its staff are currently proof-reading a computer listing to help eliminate errors of all types. Helpful suggestions have come from a great variety of sources. Dr. Charles Bishop keeps in constant touch. The Abstracting Board of the International Council of Scientific Unions has made several very acceptable suggestions, and many of the users of the codes have supplied much needed information.

Alan D. Pratt of the IBM Systems Development Division, San Jose, California, made the original suggestion for the use of a "check-letter" to eliminate common types of error in handling the codes. His idea was expanded and put to practical use by Chemical Abstracts Service. According to Frederick Hajjar of CAS, the system involves assigning digit values to letters of the alphabet and to the digits "1" through "9" and "0" as follows: A,B....Z,1,2....9,0 have the equivalents of 1,2....26,27,28....35,36. Digits are included because the CODEN of non-periodicals involve two digits and three letters. Then, position values are assigned to each character of the CODEN as follows: first letter, second letter.....fifth letter have the values of "11", "7" ("5", "3") "1". One then takes the sum of the products of the digit values for the letters and their corresponding position values and divides by 36. The remainder then defines the check-character via the first set of equivalents above. If the remainder is zero, a value of 36 is used. The computer compares the check-character with the letters and their order in the CODEN via the mathematical procedure outlined above, and all errors in single letters or transposition of letters in the CODEN are disclosed by a lack of agreement.

It is obvious that such operations should not be carried out with a pencil and that the generation of a complete title from a four-letter mnemonic code is essentially impossible unless previously memorized. For these reasons, use of the CODEN system is primarily designed for computer operated systems. They can provide the most concise, reliable "link" between information as stored in the computer and as it is currently distributed in the open literature. The computer can employ the check-character system to control error and can deliver references in terms of complete titles or standard abbreviated titles to the "reading" customer. Computers and sorters can operate on CODEN for statistical and other data, whereas this would be very difficult via complete names or even standard abbreviations.

CODEN are readily compared whereas complete titles, with word-order variations, present many problems. Although designed for computer manipulation of references, CODEN have proven acceptable in published form where a great many references are involved, e.g., in *Chemical Titles*. A recent book, *Handbook of Ultraviolet Methods* by R. G. White (Plenum Press) makes quite acceptable use of CODEN for its many references. It is also easy to learn the CODEN for 50 to 100 periodical titles if one works with them all the time.

CODEN have been made an ASTM Standard, and they have been submitted to the American Standards Association for possible approval as an American Standard. They are under study by the Abstracting Board of the International Council of Scientific Unions and by Working Party No. 1 on Scientific Publications of the United Nations Educational, Scientific and Cultural Organization with a view to making them a "recommended international practice." CODEN are currently being used by some 65 organizations in many countries which have submitted requests for new code assignments. It is not known how many others are making use of them and have

not found it necessary to request new codes. Government agencies, educational institutions, and industrial libraries are about equally represented. Several special information processing centers, such as Chemical Abstracts Service, Biological Information Services, the American Geological Institute, Southwest Research Institute, International Business Machines, etc. are using CODEN.

Special interest in CODEN has developed in Europe as a result of activities within the European Atomic Energy Community. Carlo Vernimb, Directorate General for Dissemination of Information, EURATOM, has instituted the use of CODEN to provide a unique code designation for each individual paper. These codes are published with the title and author and involve a CODEN, volume number and serial number of the paper in the volume. His paper was published in *Euratom* and has the code designation of EUBU-3-19. Jacques Halkin of Brussels won a first prize cash award from the International Association of Documentalists and Information Officers with a paper describing the use of CODEN. The National Bureau of Standards at Boulder, Colorado, makes use of CODEN for checking the completeness of abstracting operations. The British Patent Office requested a CODEN assignment to designate patents for each country in the world.

Uses for CODEN seem to vary widely, and no systematic attempt has been made to determine the nature of these uses. However, we do know that there is a steadily increasing demand for new codes and have received a great many letters of inquiry. "Are you prepared to supply CODEN for the titles of periodicals in all areas of human knowledge?" is one of the most frequently asked questions. To this we reply that we will code the title of any bona-fide periodical at the request of a user of the codes. That is the only way new codes are currently being assigned. Very short lists are being handled by phone almost daily, and others come by telegraph and the mails. Numbers of titles vary from one to over 3,000, which were brought to our office in person by a representative from the American Geological Institute in Washington, D. C. Most requests of 100 or less titles get 24-hour service. We would be happy to assist anyone interested in putting CODEN to work.

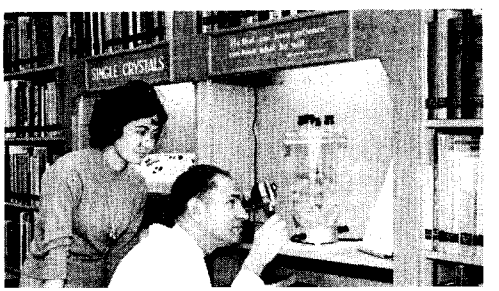
Laboratory Library Becomes Library Laboratory

As every librarian knows, often a library client doesn't know anything about the work of the man in the next office. The specialists at Lincoln Laboratory, Massachusetts Institute of Technology, welcome the opportunity to seen some of the things about which they have heard or read. Realizing this is a library function, we gave space to an exhibit case in a prominent place opposite the circulation desk. Although it is obvious that a case in a place such as this would focus attention on anything in it, it is not intended for books. This first display is of micro-electronics, showing a large silicon single crystal, silicon crystal wafers with multiple duplicate circuits, and the wafer chip with the complete integrated circuit with lead wires attached. The entire circuit, less than pinhead size, was shown under a microscope so that the amazingly minute detail could be seen.

The exhibit case is very simply made with a flat frame border attached by cleats to the inside of the stack uprights, with cork bulletin board material similarly fastened at the back. It occupies a 3 x 6 foot space, displacing three shelves from each of two sections. The regular shelf brackets remain, and the shelves can be adjusted as usual. Lights and electric outlets have been installed above each section, and two transparent shelves are provided. With one screwdriver the entire installation can be dismantled within minutes and the shelving restored to its pristine functional simplicity. Exhibits are changed about every two months. Lincoln Laboratory Library does *not* have extra shelf space; we just crowd other shelves and accelerate our weeding. We feel that the attraction and attractiveness justifies the placement of this set-up where it cannot be overlooked.

LOYD R. RATHBUN
Lincoln Library Office
Lincoln Laboratory, Lincoln, Mass.

A scientist and a library assistant watch the growth of an iodine crystal.



Three Library Films—A Review

MOTION PICTURES about libraries and librarians now are available on at least three levels of interest, based on a showing in New York City on February 14, 1966, at a meeting sponsored by the Library Public Relations Council. Each of the color films shown was obviously made for a different purpose.

The newest of the three was the most sophisticated in filming techniques, treatment of the subject, and audio effects. It was jointly produced by the Pennsylvania State Library and the University of Pittsburgh's School of Library and Information Sciences. The title, "The Challenge of Change," was apt, as the theme briefly was that in a world of constantly changing conditions, mankind has a greater need than ever for knowledge and for management of the flow of knowledge (a close cousin to SLA's "Putting Knowledge to Work"). The 20-minute film was aimed at arousing the curiosity of college juniors or seniors in the ways in which knowledge, or data, is acquired, organized, stored, retrieved, and used.

It was subtle in the ways in which libraries and information centers were worked into the film. It made no attempt to present an orderly account of how libraries are organized, as it skipped around, with interspersed bits of swirling colors and montage effects to keep the effect rather diffuse (if not a bit on the nervous side), which was heightened by the lively, almost distracting modern jazz background. It did include special libraries as well as other types, but the emphasis was on managing the vast amount of information available now, including an estimate by a scientist of the number of journals he should be reading to keep current in his field. Flashing lights of computers and stacks of punched cards gave it an electronic age aura.

Unlike many previous attempts at this sort of film, this one will give practicing librarians little to hoot at if they are looking for distortions, or oversimplifications. It was well written and was an enjoyable film that would appeal to a typical intelligent college student. It won't tell him what a cataloger does, but it should arouse his curiosity to the point that he'll stay around to ask for a brochure to learn more about a career in this field. Copies sell for $150 each, available from William M. Matthews and Co., 130 Seventh St., Pittsburgh, Pennsylvania; prints may be borrowed from the library school, University of Pittsburgh, Pittsburgh 15213.

The other two films were produced by Wing Productions, Bedford, Massachusetts, with the cooperation of Karl Nyren, Librarian at the Lexington, Massachusetts, Public Library, and have been around for a few years. One film, "Key to a Future," seemed to be suitable as a recruiting film aimed at students in grades 7-10. It was based on two teen-agers seeing themselves in the roles of the various types of librarians they were reading about in a career study brochure. It was quite straightforward by comparison with the first film, but cleverly done for the age group involved. There were a few laughs from this particular audience at the wrong places, but teen-agers would probably take it all in with interest.

The third film, "The Fifth Freedom," seemed to be best suited to spur taxpayers in communities to lift their sights as to what their public library should be like and was a National Library Week project of the 1963 Massachusetts NLW committee. It was more obvious in style than the other two, yet not done in too heavy a fashion. But its appeal to a would-be recruit to the profession would probably be slight.

The latter two films, each 15½ minutes long, are often available on loan from large film libraries, and SLA Headquarters has two prints of "Key to a Future" that may be borrowed by members without charge.

ELLIS MOUNT
Science and Engineering Librarian
Columbia University Libraries, New York

Library Orientation Slides Available

Copies of the Monsanto Company Information Center's two slide-tape presentations—Central Library (74 slides) and Central Reports (71 slides)—depicting over-all operations, have been contributed to the Association and are available on free loan from Headquarters. Please give three alternate dates when requesting.

LTP Reports to SLA

LTP Has New Name

The Library Technology Project became the "Library Technology Program" on July 1, retaining the initials by which so many people know it but dropping the temporary connotation of "project."

Library Insurance Policy

Hartford Fire Insurance Company's Special Library Insurance Policy is now approved for writing in Virginia, making a total of 42 states plus the District of Columbia in which the policy is so approved.

New LTP Books

The report on a joint project of SLA and ALA is now available from the ALA Publishing Department for $3. Called *Development of Performance Standards for Binding Used in Libraries, Phase II,* the book reports on a program that developed three provisional performance standards for binding used in libraries—one on durability, one on workmanship, and one on open-ability. The book reproduces these standards and documents the history of the program. Two new testing devices are described and illustrated.

Paul Howard, Executive Secretary of the Federal Library Committee, was SLA's representative on the advisory committee.

Scheduled for publication in August is *Copying Methods Manual,* by William R. Hawken, to be sold by ALA's Publishing Department for $15. The manual is a comprehensive study of processes that can be used to copy library materials and documents, with special discussion of the characteristics of originals that govern their reproducibility and of methods and techniques for producing full-size copies, microcopies, and eye-legible copies from microforms.

Both books will be distributed on the ALA Publishing Department's Standing Order Plan to all subscribers to the category for LTP numbered publications.

Hawken Awarded Fellowship

William R. Hawken, LTP's consultant on document reproduction, was named a fellow of the National Microfilm Association at its annual convention in May. He is the 38th person so honored since the founding of NMA.

Funds Approved

The Council on Library Resources has approved funds to finance LTP from July 1, 1966 through August 31, 1967.

Containers on the Market

The reusable containers for shipping books on inter-library loan, designed for LTP by Container Laboratories (*Special Libraries,* January 1965, page 54), are now sold by Demco Library Supplies, Box 1488, Madison, Wisconsin.

Library Technology Reports

Feature of the May issue of *Library Technology Reports* is an evaluation by Buyers Laboratory of 12 electric typewriters. Planned as the lead report of the July issue is one on the loading and finish performance of ten samples of steel, bracket-type library shelving, the first in a series of reports on this shelving.

Institutional Research Council

Copies of IRC's 1966 *Certified Products List* are available on request from LTP. This is a listing of cleaning and maintenance products and commercial carpets and textiles that have been laboratory-tested and/or certified to comply with standards prescribed for 1966.

The project to evaluate carpet underlays (*Special Libraries,* January 1965, page 54) is complete. Inquiries as to date of publication and price of the report of the results should be sent to IRC, 221 West 57th St., New York 10019. According to the study, carpet life can be increased from nine percent to 33 percent by using an underlay.

Richard W. Luce, Assistant Director of LTP, was elected President and Forrest F. Carhart, Jr., LTP's Director, was elected Secretary, at IRC's recent annual meeting.

MRS. GLADYS T. PIEZ, General Editor
Library Technology Program
American Library Association, Chicago

Call for Papers

SPECIAL LIBRARIES ASSOCIATION ANNUAL CONVENTION

New York City, May 28-June 2, 1967

THEME: "PUTTING KNOWLEDGE TO WORK"

PAPERS ARE CORDIALLY INVITED from all SLA members, library school students and faculty members, and others for use in connection with various programs during the 1967 Convention. The theme of the Convention is the Association's long-respected motto, and it may be thought of as an "umbrella" that can appropriately cover a wide range of subjects related to special library service. Among the possible uses of these papers are Division programs or joint programs and publication in *Special Libraries*.

Papers should be approximately 1,500 words long and based on literature search, original research, or personal experience. And they should not have been published nor presented previously to any national group.

Information and Instructions for Authors

1. Send the paper *or* the title of the paper and name(s) of author(s) accompanied by an abstract to: ELIZABETH FERGUSON, Institute of Life Insurance, 277 Park Avenue, New York, New York 10017, **not later than September 15, 1966.**

Abstract forms may be obtained from: Special Libraries Association, 31 East 10th Street, New York, N. Y. 10003.

2. The abstract should not exceed 200 words or the equivalent. Please use the official abstract form for the first copy of the abstract if possible. In any case, please supply the information called for on this form. In case of co-authorship, the name of the person expected to present the paper must be underlined. The name and the address of the institution or company sponsoring the paper should be given as well as the names and addresses of the current professional affiliation(s) of the author(s).

The author should prepare this abstract carefully so that it will arouse interest in his paper and do justice to it. The abstract should set forth the purpose of the paper, important results, and conclusions. Please avoid historical summaries and generalities. The abstract will be reviewed by a committee to determine its interest to SLA members. Notification of acceptance will be given no later than November 1, 1966.

Full text of all papers must be received by January 10, 1967.

3. The Special Libraries Association has first right to publish all papers presented at its meetings. All are screened by the *Special Libraries* Committee. Papers not accepted for publication in the journal will be released to the authors.

4. Diagrams and data to be presented visually should be made legible through the use of large letters, heavy lines, and limited data on each illustration. Printing should be readable from 150 feet. Projection equipment must be specified and requested when the abstract is submitted. An overhead projector is suggested.

5. No paper will be accepted unless an author expects to be present.

COMING—A LIBRARY ASSOCIATION WORKSHOP

A LIBRARY ASSOCIATION WORKSHOP for officers, committee chairmen, and executive secretaries of national, regional, state, and local library associations—the first of its kind ever held—will be sponsored by the Graduate School of Library Science, Drexel Institute of Technology, November 9-11. Speakers and panelists will be library association executives and representatives from national associations outside the library field. The Workshop fee is $50 and will cover all expenses. For further information write to Margaret Warington at the library school. "A Guide to Library Association" will be published by Drexel following the Workshop. Bill M. Woods, SLA Executive Director, is Chairman of the planning steering committee.

Educational Communications Conference

On April 13-15, 1966, the Interuniversity Communications Council (EDUCOM) sponsored a Conference on Educational Communications at Duke University. In attendance were representatives from industry, government, professional societies, foundations, institutes, and delegates from the 27 universities forming the present membership of the Council.

Since EDUCOM is a relative newcomer to the communications field, a brief preliminary description of its origin and goals may be of interest. With an initial five-year grant of $750,000 from the Kellogg Foundation, a non-profit corporation (EDUCOM) was formed in mid-1965 to facilitate "collaboration among institutions of higher learning in their efforts to utilize the emerging communications sciences." All information-processing activities are of concern to the organization—for instance, computerized programmed instruction, library automation, educational television and radio, and the use of computers in university administration and in clinical practice. Every properly accredited college and university in the United States has been invited to join.

The Conference at Duke was in one sense a progress report and at the same time a request for suggestions as to future direction. Studies are already under way in three areas: *1)* Dr. Ralph Gerard, Dean of the Graduate Division, University of California at Irvine, is leading the Task Force on Educational Systems and Technology; *2)* Professors Benjamin Kaplan of the Harvard Law School and Arthur Miller of the University of Michigan Law School are co-chairmen of the Committee on Copyright; and *3)* Dr. George W. Brown, Graduate School of Business Administration at UCLA, heads a Task Force on Information Networks. Reports described the current activities and plans of all three task forces. Additional research studies are in the planning stage.

The participants in the conference were asked to comment critically on the role of EDUCOM during the panel discussions of the second day. While most felt that a definite need was being met by EDUCOM in synthesizing the advances taking place in diverse fields, there was also a concern on the part of some that at this time such an organization is superfluous, if not downright detrimental, to real progress.

The leadership of EDUCOM to a great extent is exercised by administrators, not by practitioners. The classroom teacher, who, contrary to the implicit assumptions of EDUCOM, may actually enjoy teaching, is vaguely troubled by the prospect of individual students in decentralized automated carrels absorbing facts from an array of tapes, screens, and recordings. The social, and sometimes even moral, development of the student has been an auxiliary concern of higher education in the past. It obviously would not be in EDUCOM's future.

Another practitioner, the special librarian, may also be alarmed by the entrance of this ambitious newcomer. With such glowing predictions that "a relative small number of such systems, i.e., huge electronic memories, could contain the entire text of the National Library of Medicine, for instance, and make it all speedily accessible on demand, across the nation, to an individual anywhere on a network," the advances made in our daily library operations appear pedestrian indeed. Management may be less and less inclined to support libraries when the information millennium seems so near at hand. Why buy more books when the entire Library of Congress will soon be instantaneously available?

The information processing specialist can not refrain from a certain *deja vue* attitude. Another audience has caught the fever and, it will take a year or two to temper the initial enthusiasm with the realities of economics, computer capabilities, and user needs.

James D. Ramer, Librarian
J. Murrey Atkins Library
University of North Carolina
Charlotte, North Carolina

Have You Heard . . .

CLR Grants

Michigan State University has received a $59,823 Council on Library Resources grant for a one-year study of the cost of automation applications in libraries. To be studied are the key punch, paper-tape, typewriter, and the optical scanner methods of converting bibliographical data into machine readable records for use in library automation. The results will provide cost figures on conversion and operational costs that will help other libraries reach a decision on whether or not to change to automated processing.

A grant of $1,200 has been made to the Pan American Union toward the costs of planning a book selection list for Latin American university libraries. The grant will be used specifically for a meeting in Mexico at which probable costs of planning the buying list and other details will be discussed.

Republic Aviation Division of the Fairchild Hiller Corporation, Farmingdale, New York, wil conduct a nine-month, $65,000 analysis and verification program involving a number of studies in the field of microform storage and retrieval, based on the Micro-Vue information system, which utilizes film chips. The objective is to discover if it is technically feasible to adapt the system to library uses. Other areas of study will include the development of a library-oriented demonstration model Micro-Vue, a test chart for use in analysis, costs, hard copy print-out, and practical limits of photographic reduction for a defined range of library materials.

Chemical Information System Planned

The National Science Foundation, the National Institutes of Health, and the Department of Defense, working under the auspices of the Office of Science and Technology, are financing a $164,036 project for a general design of a National Chemical Information System and a plan for its development. The study, which is being carried out at Information Management, Inc., Burlington, Massachusetts, will investigate, on a nation-wide scale, modern information handling methods and equipment, set up a system, describe what the system will be required to do, indicate the necessary performance characteristics, and develop a plan containing estimates on time, costs, and personnel required to bring the system into being.

"Engineering Index" Project

A $379,400 National Science Foundation grant has been made to Engineering Index, Inc., for continued support of a program to mechanize the electrical-electronics and plastics sections of *Engineering Index* and to provide computerized information storage and retrieval capability in these subject fields. The indexing methodology used is based on the Thesaurus of the Engineers Joint Council, and the bibliographic citations and indexes will be stored on tape for computerized searching of published documents.

POTENTIAL OFFICERS ? ? ?

Do you know SLA members who have the ability, training, experience, personality, and energy to serve effectively as officers of the Association? If so, please do the Association a favor by calling these individuals to the attention of the SLA Nominating Committee for 1966-67. The positions to be filled are:

President-Elect of SLA
Chairman-Elect of the Advisory Council
Treasurer for a 3-year term
Directors (2) for 3-year terms

Send names of nominees and a statement of their special qualifications to any member of the SLA Nominating Committee before July 30, 1966.

Lois W. Brock, Librarian
General Tire & Rubber Company
Research Department
Englewood Avenue at Holmes
Akron 9, Ohio

Clara G. Miller, General Library
Imperial Oil Ltd.,
111 St. Clair Avenue West
Toronto 5, Ont., Canada

Mrs. Patricia Powell
Marine Resources Library, Dept. of Fish & Game
California State Fishery Laboratory
T.E.R. Island
San Pedro, California 90731

Cyril H. Sykes, Library Director
Miami *Herald*
1 Herald Plaza
Miami, Florida 33101

Dr. Arch C. Gerlach, Chairman
SLA Nominating Committee
Chief, Geography and Map Division
Library of Congress
Washington, D. C. 20540

Members in the News

WILLIAM D. CHASE, Editorial Librarian at the Flint (Michigan) *Journal,* was chosen by the American Specialist Program of the Department of State to help reorganize a library in Saigon for the Viet Nam Press. Mr. Chase left May 15 for the three-month assignment.

JEANNE M. HOLMES, Chief, Division of Catalog and Records, and BELLA E. SHACHTMAN, Assistant Director for Technical Services, National Agricultural Library, have received Special Merit Awards for Outstanding Cost Reduction Achievement at the Department of Agriculture from President Lyndon B. Johnson.

STANLEY D. TRUELSON, JR., former Librarian of the Edward G. Miner Library at the School of Medicine and Dentistry at the University of Rochester, resigned to become Librarian of the Medical Library at Yale University.

In Memoriam

CHARLES STEWART, Librarian, Department of National Defence Library, National Defence Headquarters, Ottawa, Canada, died May 23. Mr. Stewart was Chairman of the Military Librarians Division in 1956-57.

Coming Event

Federal Legislation for Libraries is the topic of the 13TH ANNUAL ALLERTON PARK INSTITUTE, sponsored jointly by the University of Illinois Graduate School of Library Science and the Division of University Extension, to be held November 6-9 at the Robert Allerton House near Monticello, Illinois. Program and registration details are available from the Institute Supervisor, 116b Illini Hall, Champaign, Illinois 61822.

Conference on Comparative Study of Classification Systems in the Field of Economic Development

An international conference was held in Paris in July and November 1965, under the sponsorship of the Development Centre of the OECD (Organization for Economic Cooperation and Development) to produce a multilingual list of terms or descriptors that would be useful in retrieval in economic development documentation. A working group was set up in the summer of 1965.

The staff of the OECD Development Centre constructed a consolidated list of terms by keypunching the subject headings of six libraries, and the resulting print-out was circulated to the working group for additions and deletions. The final list of approximately 2,000 terms was given tentative approval by the conference and was translated into French. The working group recommended the appointment of a standing review committee to revise and improve the list and meanwhile agreed that the list should be offered as a "moving index" to the country correspondents of the Development Centre—representatives of underdeveloped countries—to facilitate communication.

MARY T. REYNOLDS, Head
Economic Growth Center Library
Yale University, New Haven, Conn.

Letter to the Editor

On May 14, 1966, I had the pleasure of attending a Microform Conference sponsored by the Pittsburgh Chapter of SLA.

As a member of a different Chapter and having attended a number of other SLA Chapter meetings, I consider it my duty and privilege to inform you how deeply I was impressed by the efficiency, effectiveness, motivation, and dedication with which the Pittsburgh Chapter rallied to the SLA cause in putting on this most worthwhile and timely program. Their professional dedication was manifest throughout and was in the true spirit of enlightened special librarianship. I am sure that most of the 200 individuals in attendance will attest to this fact.

Particularly the work of the Conference Committee, chaired by Mrs. Margaret S. Sullivan, and that of the Conference Leader, Keith Doms, must be singled out. Undoubtedly much hard work and planning went into the selection of program speakers and exhibitors. The results were, indeed, a great tribute to the dedication and professional attitude of the Association's members.

Not only was this Conference a contribution to the enlightenment of librarians interested in the timely and rapidly developing field of microforms but it was evidence of the strength and *esprit de corps* inherent at the local levels of the SLA organization, which, unfortunately in so many areas, remains latent awaiting leadership to tap it. The Pittsburgh Chapter can be proud of its leadership if this Conference was evidence thereof.

I hope that my faint voice will encourage other SLA Chapters and Groups to follow the Pittsburgh Chapter Conference as a model and to benefit from their experience. Perhaps an SLA Convention program can be built upon this well-established foundation.

CHARLES M. GOTTSCHALK
Atomic Energy Commission, Washington, D. C.

Off the Press . . .

Book Review

KENT, Allen, Ed. *Library Planning for Automation.* Washington, D. C.: Spartan Books, Inc., 1965. ix, 195 p. $6.75. (L.C. 65-17307)

If popularity of people is rated by the number of papers or books published, Allen Kent no doubt has earned a rather high and unique place among authors, lecturers, and librarians. *Library Planning for Automation* is one of many publications bearing Allen Kent's name. This time, however, there are two basic deviations from Kent's previous works. First, the content has not been "created" by Kent, but it is "edited" by him. Second, the title in itself is completely misleading. Factually, the book covers the proceedings of a conference on the establishment of a national science library system as proposed by Dr. Stafford L. Warren, Special Assistant to the President, together with detailed exchange of viewpoints by various attendees. Sponsored by the Knowledge Availability Systems Center of the University of Pittsburgh of which Allen Kent is Director, the conference took place at the University of Pittsburgh, June 2-3, 1964, and was attended by a group of invited experts, mostly University librarians.

Dr. Warren's proposed library system calls for the establishment of regional centers that would provide microform storage for up to 50,000 published periodicals in the field of science, engineering, social science, and law. Information material required will be made available through rapid access computers. Such a far-reaching national system usually creates many interesting and complicated problems, not only in the computerized storage and retrieval area but also in the area of space equipment, cost, and copyright infringement.

Realizing this, Allen Kent has come up with an interesting, well-rounded three part conference. Part I covers three working papers: first, the presentation by Dr. Warren on his proposed national science library system; second, a paper by Samuel B. Freedman, a former official of the Bell & Howell Company, on the topic of microphotography of source documents for the proposed library system; and third, a paper by Professor Andrew D. Osborn of the Graduate School of Library and Information Science, University of Pittsburgh, on the influence of automation on the design of a university library.

Part II is devoted to a rather short discussion period related to Dr. Warren's and Mr. Freedman's papers, while Part III covers responses by various panels on library planning and copyright.

Comparing the contents of the working papers in Part I with the presentation of the ensuing debates in Part II and responses by the panels in Part III, one finds that there is much more meat offered in the latter two parts. In particular, they present a more practical approach to the many problems that are bound to plague anyone tackling a rather theoretical program of such magnitude.

Dr. Warren, a scholar well versed in his field, presented his recommendations for the establishment of a library system that would provide a pool of all published scientific literature. The network would make the literature available to all who may wish to use it. Such a network, however, should be restricted to the published scientific journals only. These were chosen since journals usually represent a stable publication where experimentation and experience in the development of standards and procedures can be carried out. Dr. Warren, upon reviewing several existing federally sponsored libraries, recommends that MEDLARS be adopted as the physical and administrative starting point for the proposed library system, becoming the Washington-based Region I of a network of seven regional centers. The network would include other existing federal libraries, such as Library of Congress, with regional centers scattered throughout the United States; each would have a duplicate tape of all holdings.

While Dr. Warren's plan is one of many similar proposals lately recommended by others, his has the unique distinction of utilizing the published journal material in contrast to others who want to collect and disseminate all the unpublished material instead.

Mr. Freedman's paper attempts to outline the feasibility of the use of microforms in the national science library system. Starting with an interesting historical review of the various microforms, the adoption of microfiche is recommended. The use of microfiches by AEC, NASA, and the Clearinghouse has, of course, a large influence on this recommendation. Each regional center would be stocked with complete sets of titles on microfiches and equipped with microfiche-to-microfiche copying equipment.

Professor Osborn's paper concerns itself with the influence of automation on the design of a university library, in particular, the need for rapid information retrieval. Dr. Osborn's paper is a scholarly work citing much historical background material.

To summarize these three papers, one cannot help but reject the book if it is intended to serve what the title implies—library planning for automation. It will not help the majority of special librarians in their quest for practical knowledge for the need or application of automation, either as a tool or a guide for their own use. However, it could satisfy those who were unable to attend the many national meetings by reading factual proceedings reports on a popular topic—national network for information storage and retrieval.

DR. CHARLES K. BAUER, Manager
Scientific and Technical Information Dept.
Lockheed Aircraft Corporation, Marietta, Ga.

Microfiche Project of SLA Divisions

The SLA Nuclear Science and Documentation Divisions have published on microfiche a bibliography entitled *Indexing and Classification; a Selected and Annotated Bibliography,* prepared by Winifred F. Desmond and Lester A. Barrer. It contains 635 citations to report, journal, conference, and other literature from 1960-mid-1964. This experiment in primary publication on microfiche is an attempt to determine the validity and reader acceptance of bibliographies in this form. There are a conventional permuted title index, a computer-printed index of manually selected terms, and an author index. It is available from the Clearinghouse for Federal Scientific and Technical Information, as NP-15937, at $7 for hard copy and $1.75 for microfiche. If this experiment proves successful, the Divisions plan to issue updated bibliographies to their members at regular intervals.

Trade Catalogs Standard

The American Standards Association has approved and published the *American Standard for Trade Catalogs, Z-39.6-1966.* Sponsored by the Council of National Library Associations, the project was under the direction of ASA Z-39 Sectional Committee, Standardization in the Field of Library Work and Documentation and Subcommittee Z-39/SC-13, Trade Catalogs, was organized to carry out the work. The general scope and purpose of the new standard is "to assist in producing trade catalogs that will contain the maximum amount of necessary information in a form that can be used most easily. It is intended to aid manufacturers and distributers in achieving greater economy in the artwork, layout, and production of trade catalogs and in their use; to improve the value, reliability, and usefulness of trade catalogs as a continuing reference for users; and to serve as a checklist for the prevention of omissions and oversights." Copies of the *Standard* are available at $5 each from ASA, 10 East 40th Street, New York 10016.

Guide to Scientific Literature

Science Associates/International, Inc., 342 Madison Avenue, New York 10017, has recently issued a pilot edition of the *Guide to International Scientific Publications & Associations,* Section B: Physics, Mathematics and Astronomy. *GISPA* includes announcements of overseas publications that might not come to the attention of the United States scientist or would be difficult to obtain. All publications listed can be obtained from *GISPA's* publisher or from the individual publishers. The spring 1966 issue carries descriptions, in English, of books and journals originally published in England, France, Germany, USSR, Japan, and elsewhere as well as a calendar of 1966 international meetings and a directory of associations. Beginning in January 1967, the *Guide* will be issued in seven separate sections covering the field of science and technology. Copies of the *GISPA* pilot issue may be obtained gratis from the publisher.

SLA Authors

ALEXANDER, Gerard L. *Nicknames of American Cities* (illustrated color map). New York: Scarecrow Press, 1966. $2.50.

ASH, Lee. "Book Review Index": A New Book Selection Tool. *Library Journal,* vol. 91, no. 8, April 15, 1966, p. 2013-5.

BECKER, Joseph. The Story of Bibliophone and the Spiral Book Chute. *D. C. Libraries,* vol. 37, no. 2, Spring 1966, p. 15-19.

BRODMAN, Estelle. The Special Library, The Mirror of Its Society. *The Journal of Library History,* vol. 1, no. 2, April 1966, p. 108-13+.

DUNKIN, Paul S. The People That Walked in Darkness. *Library Journal,* vol. 91, no. 9, May 1, 1966, p. 2267-70.

HAMLIN, Arthur T. The Rise and Fall of a Library. *ALA Bulletin,* vol. 60, no. 4, April 1966, p. 339-47.

HOLZBAUER, Herbert. National Library Week —A Broader Continuing Program. *D. C. Libraries,* vol. 37, no. 2, Spring 1966, p. 26-7.

PLATE, Kenneth H. Library Classification for Environmental Science. *Journal of the Water Pollution Control Federation,* vol. 38, no. 4, April 1966, p. 580-4.

WASSERMAN, Paul. The New School of Library and Information Services at the University of Maryland. *D. C. Libraries,* vol. 37, no. 2, Spring 1966, p. 20-2.

Indiana Membership Directory

The Indiana Chapter of SLA has recently published its *Membership Directory 1966-1967.* The eight-page *Directory* is an alphabetical listing of members giving position, business and home addresses, and Division, Section, and class of membership. To order, send a check for $1 made payable to Indiana Chapter, SLA, to: Mrs. Elizabeth S. Milner, Librarian, Academic Library, U.S. Army School Center, Fort Benjamin Harrison, Indiana 46216.

RECENT REFRENCES

Librarianship

BERRIMAN, S. G. and HARRISON, K. C. *British Public Library Buildings.* New York: London House & Maxwell, 1966. 260 p. illus. plans. tables. $25.

A comprehensive survey of British achievements, primarily over the past five years, in the field of newly constructed public library buildings. Richly illustrated with over 200 photographs, the work offers additional information through numerous building plans and tabulated data. Dedicated to and written for librarians and architects.

COLLISON, Robert L., ed. *Progress in Library Science 1965.* Washington, D. C.: Butterworth Inc., 1966. 256 p. $8.95.

First in a series of planned annual volumes, the book does not attempt to present a complete survey of librarianship during 1964 but rather a detailed examination of fields that have been undergoing changes. International facets of the subject have received particular attention, and space is devoted to the production, publishing, and selling of books. Includes chronology of library events in the United Kingdom and index. Authors and viewpoints are British.

FINLEY, Elizabeth. *Manual of Procedures for Private Law Libraries,* rev. and enl. ed. (AALL Publications Series No. 8). South Hackensack, N. J.: Fred B. Rothman & Co., 1966. xi, 176 p. $8.50.

Sets forth universal procedural problems most likely to be encountered in law firm libraries and suggests effective solutions, particularly to the non-professional librarian who may be in charge of such specialized library. Appendixes I and II provide a bibliography, arranged by chapters, and a list of publishers and dealers. Subject index.

HANNAH, H. W. *Resource Book for Rural Universities in the Developing Countries.* Urbana (and London): University of Illinois Press, 1966. 390 p. $8.50. (L.C. 65-19571)

Compiled under contract with the Agency for International Development. Detailed information on 16 institutions the author visited in 14 countries in Africa, Asia, and Latin America. Questionnaires sent to a number of other institutions provided additional data. Describes the role of agricultural education in economic development, discusses purposes of and need for new universities and necessity for a new philosophy in existing institutions, and suggests policies, procedures, and structures for installing and operating academic and administrative areas in agricultural universities. Index and appendices.

JEFFERSON, G. *Library Co-operation.* New York: London House & Maxwell, 1966. 160 p. $4.95. (L.C. 66-15264)

Based on experiences in British libraries and written mainly for the British librarian, the book offers detailed information on the evolution of schemes of cooperative acquisition, cooperative storage, exchange and redistribution of material, cooperative provision of scientific and technical literature, etc. A survey of international cooperation, its origin and present organization, and probable future developments is included. An extensive bibliography supports the text and provides references for future reading. Index.

LANDAU, Thomas. *Encyclopaedia of Librarianship,* 3rd rev. ed. London: Bowes & Bowes Publishers; New York: Hafner Publishing Company, 1966. x, 484 p. $13.25.

A comprehensive, ready-reference book on all aspects of librarianship and related subjects, such as *printing, paper making, book production,* etc. Coverage of individual topics ranges from brief, defining entries through signed monographs. While the scope of the subjects treated follows fairly closely the syllabus of the professional examinations of the British Library Association, this work should prove equally useful to librarians and library science students in general. Article on SLA is included for first time.

MALLABER, K. A., ed. *Conference on Librarian-Statistician Relations in the Field of Economic Statistics.* London: The Library Association, 1966. 138 p. tables. 40s. (approx. $6).

An attempt to recognize the real needs of and to provide the best available service to users and potential users of libraries in England. Contains five papers and resulting discussions presented at the conference, which was sponsored by the Library Association and the Royal Statistical Society in July 1965. Index.

SHORTHOUSE, Tom, *et al.,* eds. *Scrapbook for a Golden Anniversary. The University of British Columbia Library 1915-1965.* Vancouver: The University of British Columbia Library, 1965. 80 p. pap. illus. Apply.

A history of the institution written in form of an anthology of reminiscences, quotations, pictures, and articles. Provides entertaining information on the library's main stages of growth and the interests of its collections.

STEPHEN, Lorna R., ed. *Selling Library Services to Commerce and Industry: Proceedings of the 13th Annual Conference, Sheffield, March 26-29, 1965.* London: The Library Association, 7 Ridgmount St., Store St., 1965. 48 p. pap. 10s.

Verbatim account that points out the important part proper exploitation of library resources by industry and commerce can play in the drive for over-all increased productivity.

STONE, C. Walter, *et al. A Library Program for Columbia.* Baltimore, Md.: Council on Library Resources and Division of Library Extension, Maryland State Department of Education, October 15, 1965. 60 p. pap. plastic spiral binding. Apply.

A committee report on planning and managing an optimum program of library service for the new, planned city of Columbia, Maryland, undertaken under a CLR grant. Chief areas investigated include potential use of communications technology, and school and public library services as well as background information and program recommendations. A partial bibliography and information on initial cost estimates, suggested first and second year operation budgets, etc. are provided in separate appendices.

VLEESCHAUWER, H. S. DE. *Library History of the XIXth Century (1750-1914).* (*Mousaion* 79, 80), 2 vols. Pretoria: University of South Africa, 1965. 150 p.; 73 p. pap. offset. Apply (Mousaion, P. O. Box 392, Pretoria, Republic of South Africa).

Dr. Vleeschauwer relates the historical development of libraries to the evolution of Western civilization, principally European, from the time of the Enlightenment and the French Revolution and through the 19th century with its scientific libraries.

Cataloging and Classification

DANNENBRING, R. *The Classification of Law Books in the University of South Africa Library.* Pretoria, S.A.: University of South Africa, 1965. 64 p. pap. $.75.

Adaptation of division 340, law, of the Dewey Decimal Classification to suit the requirements of the University of South Africa library. Text in English and Afrikaans.

DEWEY, Melvil. *Dewey Decimal Classification and Relative Index,* 9th abr. ed. Lake Placid Club, N. Y.: Forest Press, 1965. vi, 594 p. $10 (L.C. 65-19179).

An abridgement of edition 17, published in June 1965, and revision of the 1959 abridged edition. Besides general updating there is an entirely new Area Table. "Especially designed at a level of simplicity" for small collections, small libraries, and special libraries.

HISPANIC COUNCIL—THE LUSO-BRAZILIAN COUNCIL. *Author and Subject Catalogues of the Canning House Library.* Boston: G. K. Hall & Co., 1966. Hispanic Catalogues: 4 vols. $150; $190 after October 31, 1966; Luso-Brazilian Catalogues: 1 vol. $45; $55 after October 31, 1966.

Devoted to the cultures of Latin America, Portugal, and Spain, Canning House Library's 30,000 books are mainly of 19th and 20th century origin. Holdings also include complete runs of cultural and economic serials and special collections. Catalog entries cover philosophy, religion, education, history and biography, geography, economics, language and literature, law, current affairs, armed services, bibliography, and the arts and sciences.

JOHN CRERAR LIBRARY. *Author/Title Catalog.* Boston: G. K. Hall & Co., 1966. 35 vols. prepublication price; $1,815, U.S.; $1,996.50, elsewhere: after July 31, 1966; $2,270, U.S.; $2,497, elsewhere (5% discount allowed on prepaid, prepublication orders).

This world renowned Chicago collection, including the recently added holdings of the Illinois Institute of Technology, comprises over 1,100,000 volumes of current and historical research materials in the pure and applied sciences.

———. *Classified Subject Catalog* (including *Subject Index*). Boston, G. K. Hall & Co., 1966. 42 vols. prepublication price; $2,255, U.S.; $2,480.50, elsewhere: after July 31, 1966; $2,820, U.S.; $3,102, elsewhere (5% discount allowed on prepaid, prepublication orders).

This classified subject catalog, rare in the United States, affords specific subject analysis with subordinate and coordinate classes clearly defined. The cards are arranged in subject order, based essentially upon the 14th edition of the Dewey Decimal Classification system, with extensive modifications and expansions.

———. *Subject Index to the Classified Subject Catalog.* G. K. Hall & Co.: 1966. one vol. $75, U. S.; $82.50, elsewhere.

Will reproduce approximately 40,000 entries.

LIBRARY OF CONGRESS. *Library of Congress Catalog, Subjects: 1960-64,* quinquennial ed., 25 vols. Ann Arbor, Mich.: J. W. Edwards, Publisher, Inc., March 1966. 15,000 p. $275 per set.

This set lists approximately 600,000 subject entries for about 400,000 titles that carry imprint dates of 1945 or later and have been cataloged by the Library of Congress and other libraries participating in the LC cooperative cataloging.

LYNN, Jeannette Murphy. *An Alternate Classification for Catholic Books,* 2nd ed., rev. by Gilbert C. Peterson, including 1965 supplement by Thomas G. Pater. Washington, D. C.: Catholic University of America Press, 1965. 514 p. $12.95; separate supplement, $.75. (L. C. A54-6733)

Classification of ecclesiastical literature, theology, canon law, and church history for use with Dewey Decimal, Classification Decimale, and Library of Congress systems. Index.

RANGANATHAN, S. R. *The Colon Classification* (Rutgers Series on Systems for the Intellectual Organization of Information, vol. 4), ed. by Susan Artandi. New Brunswick, N. J.: Graduate School of Library Service, Rutgers, The State University, 1965. vii. 298 p. pap. $5.

Presentation of the system and comments of a panel of experts in the field who attended the seminar meeting on November 19-20, 1964. Index.

Universal Decimal Classification—Special Edition for Education (FID 374 and 375). The Hague, Netherlands: Federation Internationale de Documentation, 1965. 82 p. Dutch guilders 25., each; f.40., English and French combined.

Main feature of the English and French versions of this new special edition is a thoroughly

revised and fully detailed class 37, covering all branches and levels of education, teaching, and training. Translations in Spanish, Portuguese, and other languages to appear in 1966.

UNIVERSITY OF ROCHESTER LIBRARY. *Science Libraries Consolidated Short-title Catalog of Books and Journals: Engineering, Geology-Geography, Life Sciences, Physics-Mathematics-Optics-Astronomy.* Rochester, N. Y: November 1965. 394 p. $8. (Available from the Associate Director of Libraries, River Campus Station, Rochester 14627)

Computer-produced title-a-line catalog of approximately 13,000 entries for about 35,000 primarily graduate-level volumes in four University of Rochester science libraries. Lists by author and title.

———. *Selected List of Scientific Periodicals in the Libraries of the University of Rochester as of January 15, 1966.* Rochester, N. Y.: January 1966. 130 p. $5. (Available from Associate Director of Libraries, River Campus Station, Rochester 14627)

Computer-produced listing covering scientific periodicals in all fields of science, including engineering and psychology. Full holdings (current subscriptions only) with indication of what is lacking, call numbers, subject, and cross references.

Information-Handling Techniques

AMERICAN FEDERATION OF INFORMATION PROCESSING SOCIETIES. *AFIPS Conference Proceedings 1965, Fall Joint Computer Conference,* vol. 27, part 1. Washington, D. C.: Spartan Books, 1250 Connecticut Ave., N.W. and London: Macmillan and Co., Ltd. 1965. 1,120 p. illus. charts. tables. $28.

Records in part the technical material presented at the Conference. Published are the formal papers selected from a record number of contributions submitted to the Technical Program Committee as outlined in the Table of Contents. While the Conference Committee hopes to publish additional material in a subsequent volume, it is pointed out in the Preface that the real and permanent contribution of the 1965 Conference is the technical material contained in the present work.

FREAR, Donald E. H. *Survey of European Non-Conventional Chemical Notation Systems* (Publication 1278). Washington, D. C.: National Academy of Sciences-National Research Council, 1965. iv, 78 p. pap. illus. $3. (L. C. 65-60053)

Nineteen different systems, most of them in actual use as of September 1963, are described in this supplement to the 1964 survey of systems used in the United States, NAS-NRC Publication 1150, *Survey of Chemical Notation Systems.* Published notation work in tthe Soviet Union and Japan will be briefly summarized in a forthcoming supplement.

CREAGER, William A. and SPARKS, David E. *A Serials Data Program for Science and Technology —Results of a Feasibility Study* (IDC-8521). Reading, Mass.: Information Dynamics Corporation. xii, 190 p. pap. charts. plastic ring binding. (Available from Clearinghouse. PB-169.)

A study of the feasibility of establishing a continuing national inventory of the world's scientific and technical serials, prepared under NSF contract C-413. Examines the major technical, operational, and economic factors involved and presents the guiding principles and approach to the implementation and operation of such a program. Selected bibliographies in appendices.

IBM 870 Library Administrative Processing System for Federal Government Libraries and Special Information Repositories. White Plains, N. Y.: IBM, Technical Publications Department. 32 p. pap. illus. charts. (Available gratis through IBM branch offices.)

Explains advantages of a simple and inexpensive automatic data processing system in library administrative work. Gives instructions for the automatic handling or preparing of documents required, such as catalog cards, printed forms, and notifications as well as retrieval and reference data.

IBM Final Report: Converting the National Union Catalog to a Machine Readable Record. Rockville, Md.: Federal System Division, International Business Machines Corporation, July 1, 1965. 70 p. pap. tables and charts.

Report on a three-month pilot project conducted by IBM under sponsorship of the Council on Library Resources, Inc. Purpose of the study was to determine the costs of converting the pre-1952 Section of NUC, and the prinicipal objects were identification of problems arising from such conversion, developing the best method of conversion, estimation of costs, and developing recommendations for the conversion effort.

Dictionaries

BAKER, C. C. T. *Dictionary of Mathematics.* New York: Hart Publishing Company, Inc., 1966. v, 338 p. illus. $6.95, cloth; $2.65, paper.

Provides immediate explanatory references to the most commonly used terms, theorems, tables, processes, and derivations employed in algebra, arithmetic, geometry, trigonometry, co-ordinate geometry, and the calculus. Extensive appendices on symbols, mensurations, formulae, and tables make this one-volume dictionary especially helpful to students as well as to all those whose work requires use of the tools of mathematics.

CARTER, Harley. *Dictionary of Electronics.* New York: Hart Publishing Company, Inc., 1966. vi, 410 p. illus. pap. $2.65.

Contains concise definitions from many branches of electronics such as radio, television, communications, radar, electronic instrumentation, and industrial electronics. Should prove useful to students, technicians, and scientists alike. The individual entries are arranged alphabetically, cross-indexed by means of key words, and extensively supplemented by an addenda and tabulated data, including circuit symbols, abbreviations, color codes, conversion tables, and valve bases.

CASH, Edith K. *A Micological English-Latin Glossary* (Mycologia Memoir No. 1). New York and London: Hafner Publishing Company, 1965. iv, 152 p. pap. $8.50. (L.C. 65-21537)

Alphabetically arranged list containing terms most likely to be used in the preparation of Latin diagnoses of fungi. Designed primarily for use in connection with *Mycologia Memoirs,* a publication of The New York Botanical Garden and the Mycological Society of America.

CHIU, Hong-Yee, ed. *Chinese-English, English-Chinese Astronomical Dictionary.* New York: Consultants Bureau Enterprises, Inc., 1966. xiii, 173 p. $15.

Approximately 4,000 entries in each language, covering astronomical nomenclature and the vocabulary of astrophysics. For the compilation of the English-Chinese section, the author used the Jen-Tee-Tze system of translation. The Chinese-English section is based on material prepared by Chinese scholars over a period of 20 years and first published in 1952 and revised in 1956.

CLASSIFIED ADVERTISING

Positions open and wanted—50 cents per line; minimum charge $1.50. Other classifieds—90 cents a line; $2.70 minimum. Copy must be received by tenth of month preceding month of publication.

POSITIONS OPEN

AMERICAN REPRESENTATIVE—Challenging opening in European publishing firm with US office in the New York area. Our expanding sales activities in the United States and Canada offer an excellent opportunity for a (serials) librarian having gained knowledge and ample experience in the field of serials and scholarly journals. Salary depending on qualifications, experience and background. Good fringe benefits. Write Box C 45.

ASSISTANT DIRECTOR—For Public Services in a University Library. Should have an open mind, an ability to deal with people, a flair for administration, and ability to implement new and progressive programs in a traditionally conservative library. Academic program of university is being rebuilt, strengthened and expanded and library growth must parallel these developments. Planning and installation of new up to date procedures and methods is a must. Full faculty status. TIAA retirement. Salary open. Write Box C 38.

ASSISTANT LIBRARIAN—For Cataloging. Responsible for cataloging and classifying, using NLM and LC, all monographs and serials added to collection. Requires ALA-accredited library school degree and at least two years cataloging experience. Medical library experience helpful, but not required. For further information write: Personnel Department, The University of Texas, M. D. Anderson Hospital and Tumor Institute, Houston, Texas 77025.

CATALOGER—Wanted to take full charge of processing division of a college library. Good salary based on experience for capable person. Apply Librarian, Newark College of Engineering, 323 High Street, Newark, New Jersey 07102.

CATALOGER—With library degree for interesting varied work in congenial, forward-looking engineering library. Thirty-five-hour week with good fringe benefits. Salary: $6,600+ depending upon background and experience. For information contact Mrs. Margaret C. Soroka, Engineering Societies Library, 345 East 47th Street, New York 10017.

CHALLENGING HEADSHIP—Available in a dynamic and expanding business, industry and science department of four professionals. Collection includes patents, military specifications, journals and special services. The department is Public Library Resource Center for books, materials, and consulting services under State Aid program. Liberal benefits. Salary commensurate with experience. Apply to: F. Kurt Cylke, Assistant Librarian, Providence (Rhode Island) Public Library.

CIRCULATION LIBRARIAN—Wanted for college library. Good salary based on experience for person willing to assume responsibility for all circulation procedures including maintenance of reserve book collection. Apply Librarian, Newark College of Engineering, 323 High Street, Newark, New Jersey 07102.

DENTAL LIBRARIAN—Plan Library for new School of Dentistry building and expansion of present collection of 6,000 volumes. Degree in library science and pertinent experience required. Position will carry beginning rank of Assistant Professor with beginning salary of $11,000. Open July 1, 1966. Faculty retirement and sick benefits including social security. Usual professional vacation. Classification, cataloguing, and routine ordering done by centralized Technical Services. Supervise assistants. This is opportunity to be the key person in developing library for one of the largest dental schools in the country. Write: Dr. William D. Phoenix, Associate Director, University of Missouri at Kansas City Libraries, 5100 Rockhill Road, Kansas City, Missouri 64110.

DOCUMENTS/SERIALS LIBRARIAN—Salary range $600-$745. Fifth year degree from an ALA accredited library school plus four years of professional experience including work with documents required. Send applications including references to Oregon State Library, Salem, Oregon 97310.

HEAD LIBRARIAN—Needed for small college library located in downtown San Francisco. An accredited library degree plus experience is required. Salary $9,000.00 to $10,000.00. Also need Head of Public Services. Salary $6,500.00. Apply Golden Gate College, 220 Golden Gate Avenue, San Francisco, California.

HIGHWAY SAFETY RESEARCH LIBRARIAN—Experienced graduate librarian to develop new library. Interest in information retrieval. Beginning $9,000-$11,000. Write Miss Marjorie M. Tompkins, Personnel, University of Michigan Library, Ann Arbor 48104.

LIBRARIAN—For technical library devoted to serving the interests of laboratory personnel. Library degree and some experience desirable. Varied work in reference and materials ordering involved. Large midwestern company. Outstanding employee benefit program, including profit sharing. Write Box C 46.

LIBRARIAN—Needed to administer a technical library for a permanent government transportation-land use study. The library contains over 1,000 reports covering a wide range of planning and governmental policy subjects. CDC 3200 computer and computing division on premises offer opportunities for experimentation with automated information retrieval techniques. Primary responsibilities: subject cataloging of collection, managing library operations, performing research functions. M.L.S. required; planning experience desired but not necessary. An equal opportunity employer. Salary open depending on qualifications. Send resume to Robert C. Stuart, Technical Director, Cleveland-Seven County Transportation-Land Use Study, 439 The Arcade, Cleveland, Ohio 44114.

MENTAL HEALTH RESEARCH LIBRARIAN—Mental health broadly conceived as behavioral science specialty, not exclusively medical, psychiatric, clinical. Close liaison with research staff of about 100. Behavioral, natural science, or engineering background. Library science degree, special or academic library experience, interest in information retrieval desirable. 3000 volumes (intention to keep collection weeded and confined to current interests). Two clericals, beginning $9,000-$11,000. Write Miss Marjorie M. Tompkins, Personnel, University of Michigan Library, Ann Arbor 48104.

PART TIME—Highly specialized opening October 1, 1966, in attractive resort town on eastern Long Island because of impending retirement of the librarian of the Long Island Collection. 30 hours June 15-September 15, 22 hours balance of year. Salary $4,000 per annum. Address: Miss Ruth Naimy, Director, East Hampton Free Library, East Hampton, New York 11937.

QUEEN'S UNIVERSITY—at Kingston, Ontario, requires senior and junior library staff: *Administrative Assistant* with background in personnel, production, business administration, or data processing, to study systems, possible mechanization; *Assistant Chief Librarian* for reader services and system of 18 branches; *Catalogers* (L 3, $7,500; L 1, $5,800 up), LC classification, study of new rules; *Assistant Order Librarian* (L 1); *Law Cataloger* (L 1); *Education Librarian* (L 3) and *Assistant Education Librarian* (L 1) for new McArthur College of Education, to open 1968. Opportunities for special librarians with varied interests, professionally active, good academic background. New building, 523,000 volumes, staff 114, excellent fringes. Apply to D. A. Redmond, Chief Librarian, Queen's University, Kingston, Ontario, Canada.

TECHNICAL LIBRARIAN—North Carolina State University is seeking a staff member for a state industrial Technical Information Service. The work of the first year will involve searching, reference work, establishing services and policy. Experience in industrial library or scientific or technical training preferred. Establishing this service will be challenging. Staff will grow. Salary depends upon qualifications. Apply to: I. T. Littleton, North Carolina State University Library, Raleigh, North Carolina.

TORONTO, CANADA—The Toronto *Star*, Canada's largest newspaper, requires a professional librarian to assist the Head Librarian in designing new methods of information storage and retrieval and assigning subject headings to newspaper clippings. Responsibilities also include some cataloguing and reference work. Salary $6,000 or better, depending on qualifications. Full fringe benefits including 3 weeks' annual vacation after one year's service. The *Star* Library has a staff of 14. Resources include 5,000 general reference books, 60,000 biographical files, and 13,000 clipping subject files. This position should be attractive to someone interested in current events and public service. Write R. B. Campbell, Personnel Department, Toronto *Star*, 80 King Street West.

UNDERGRADUATE LIBRARIAN—University of Tennessee. Salary ($10,000 to $15,000) and academic rank (instructor to full professor) determined by ability, experience, degrees, etc. Twelve-month position, one month's vacation, plus University holidays; group insurance and hospitalization; TIAA-CREF retirement plan; full faculty status. East Tennessee has exceptional climate and scenery, growing recreational and cultural facilities. Job now open. Present undergraduate library in the main library building will be moving to new $2½ million separate library (now in final stages of planning) to hold 175,000 books and 2,000 students, with approximately 25 full-time staff. This is a major professional position. Write to William H. Jesse, Director of Libraries, University of Tennessee, Knoxville 37916. An equal opportunity employer.

UNIVERSITY OF ILLINOIS—Library of Medical Sciences, Chicago. Cataloger, fifth year library school degree, experience desirable. Minimum salary $6,600, month vacation, retirement system, academic rank. Write: Wilma Troxel, Director, University of Illinois, Library of Medical Sciences, 1853 West Polk Street, Chicago, Illinois 60612, Telephone 312—663-7332.

UNIVERSITY OF CALIFORNIA LIBRARY—Davis has professional positions available July 1, 1966. The following five positions will be at the Librarian II classification, $6800-$8700. A minimum of two years professional experience is required for appointment at the Librarian II level. Appointment at the Librarian I classification, $6000-$7400, is possible if applicant lacks the requisite two years experience. Positions available: *Catalog Librarian,* experience in cataloging foreign language materials desirable. *Catalog Librarians* (2), experience in cataloging biological and medical science materials desirable. *Reference Librarian,* experience in general reference work desirable. *Reference Librarian and Subject Specialist* in social sciences, graduate work in the social sciences is desirable. An additional position will be at the Librarian III classification, $8300-$10,100. A minimum of four years of professional experience is required. *Reference Librarian,* Health Sciences Branch Library; an academic major in the biological sciences is preferred. Applicants must have graduate degree in library science. Positions have academic status and generous fringe benefits. Davis is a pleasant university town, about one hour and fifteen minutes by freeway from the San Francisco Bay Area and fifteen minutes from Sacramento by car. Apply to J. R. Blanchard, University Library, University of California, Davis, California 95616.

POSITIONS WANTED

EDITOR—Editing or writing position in an information center desired. Young woman with B.A. and information science courses. Experienced in

editing a technical publication and in administering small company library. Delaware Valley area only. Write Box C49.

MUSIC/ART LIBRARIAN—Seeks position college, school library, New England, New York, New Jersey. Young man, MLS, MA (music); experience, three years' reference and cataloging. Available now. Write Box C48.

TECHNICAL LIBRARIAN—Woman. Eight years' experience in all phases of library operations, industrial and college, including information retrieval techniques. Fluent French. Interested in maintaining or setting up a technical library. Write Box C47.

WANTED TO BUY

PERIODICALS, duplicates, surplus for cash or exchange. Write for free Library Buying List. Canner's SL, Boston 20, Massachusetts.

FOR SALE

FOREIGN BOOKS and periodicals. Specialty: search service. Albert J. Phiebig, Box 352, White Plains, New York 10602.

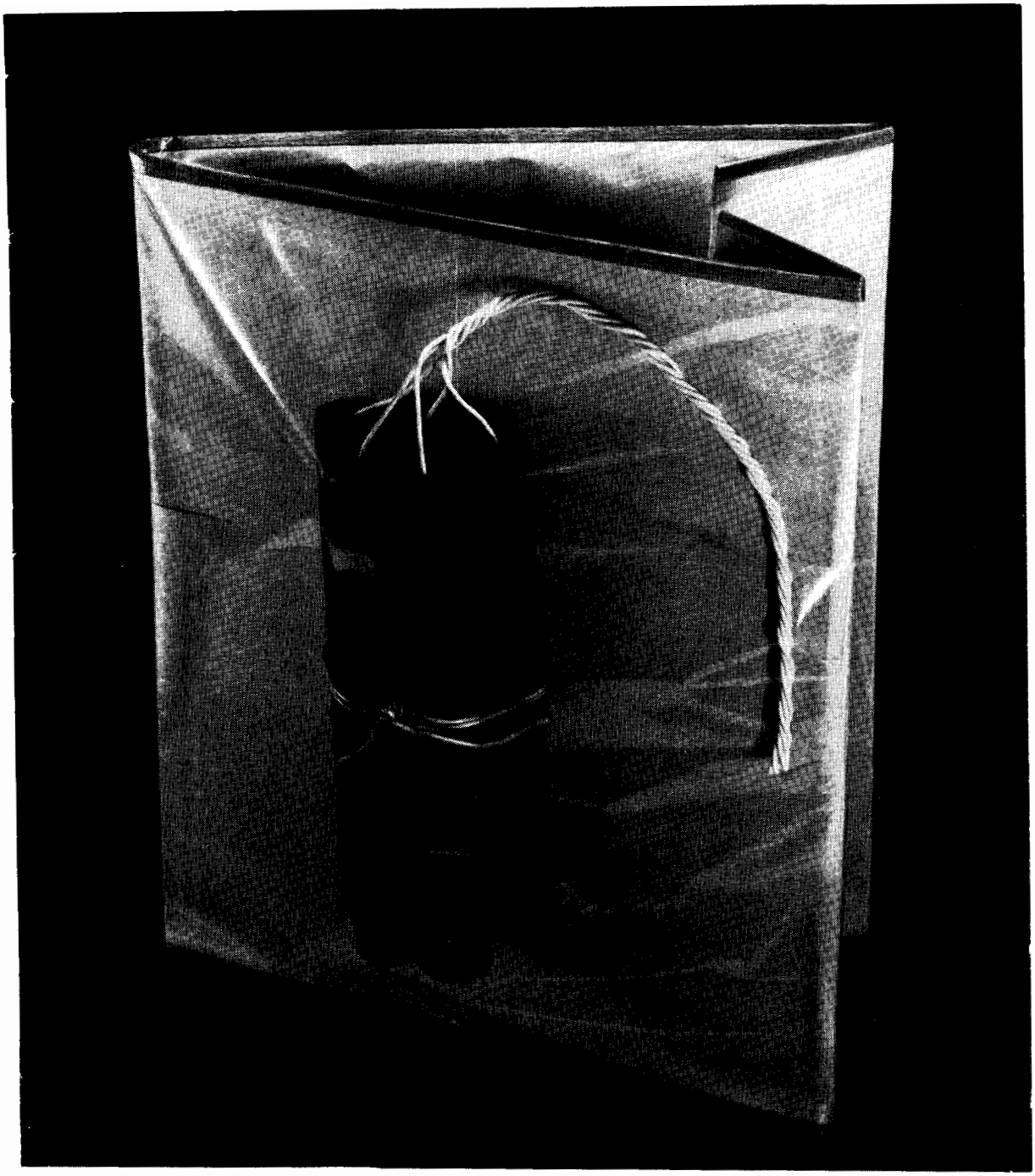
JOURNAL OF ECONOMIC ENTOMOLOGY, 1952-1965, vol. 45-58, unbound, good condition, $175. *Proceedings American Society for Horticultural Science,* 1951-1965, vol. 51-87 bound plus index vol. 1-58, $175. Prices FOB. Lake Forest, Illinois. Net 30, as shown, or make me offers. Grant Willey, 408 Ravine Park Drive.

SPECIAL LIBRARIES ASSOCIATION PUBLICATIONS

*Aviation subject headings and classification guide, *1966*	$6.30
Business and industrial libraries in the United States, 1820-1940, *1965*	7.00
Correlation index document series & PB reports, *1953*	10.00
Creation & development of an insurance library, rev. ed., *1949*	2.00
Dictionary of report series codes, *1962*	12.75
Directory of business and financial services, *1963*	6.50
Directory of special libraries, *1953*	5.00
*German chemical abbreviations, *1966*	6.50
*Guide to metallurgical information (SLA Bibliography no. 3), 2nd ed., *1965*	7.00
Guide to Russian reference and language aids (SLA Bibliography no. 4), *1962*	4.25
Handbook of scientific and technical awards in the United States and Canada, 1900-1952, *1956*	3.00
Literature of executive management (SLA Bibliography no. 5), *1963*	4.25
Map collections in the U.S. and Canada; a directory, *1954*	3.00
National insurance organizations in the United States and Canada, *1957*	3.50
Picture sources, 2nd ed., *1964*	6.75
SLA directory of members, as of July 15, 1964, *1964* ..... members	2.50
nonmembers	10.00
Source list of selected labor statistics, rev. ed., *1953*	2.00
Sources of commodity prices, *1960*	5.00
*Sources of insurance statistics, *1965*	8.25
Special Libraries Association personnel survey 1959, *1960*	1.00
*Special libraries: a guide for management, *1966*	4.00
Special libraries: how to plan and equip them (SLA Monograph no. 2), *1963*	5.55
Subject headings for financial libraries, *1954*	5.00
Subject headings in advertising, marketing, and communications media, *1964*	5.95
Translators and translations: services and sources in science and technology, 2nd ed., *1965*	14.50
U.S. sources of petroleum and natural gas statistics, *1961*	6.00

*Latest publications

SCIENTIFIC MEETINGS—Subscription, $7.00; Foreign, $8.00
SPECIAL LIBRARIES—Subscription, $10.00; Foreign, $11.00; Single copies, $1.50
TECHNICAL BOOK REVIEW INDEX—Subscription, $10.00; Foreign, $11.00; Single copies, $1.50
UNLISTED DRUGS—Subscription, $20; Single copies, $2.00
SLA serves as the U.S. sales agent for selected Aslib publications



We've run all sorts of tests on our Lifetime® Book Jacket Covers, but...

it failed this one! However, we don't feel too bad because it passed all the important tests.
Like the one that checked the durability and long life of the cover. Or the one which checked the exclusive edge reinforcement. Or the test on the Kraft paper backing that confirmed the protection afforded the book binding.

As good as the Plasti-Kleer® Lifetime Book Jacket Cover is—and it is, unequivocably, the best cover available—it still cannot withstand a blast of dynamite. But then, how many books are really that explosive?

Maybe, some day, we'll try this test again. But first we have to replace our laboratory...

Only the Lifetime® Protects Best!

Only by **Bro-Dart** Industries
Dept. SL7, P.O. Box 1120, Newark, N. J. 07114
P.O. Box 90337, Airport Station, Los Angeles, Calif. 90009
IN CANADA. Bro-Dart of Canada Ltd.
6 Edmondson St., Brantford, Ontario